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MULTIPLE RENAL CALCULI, UNILATERAL AND BILATERAL

SOME OBSERVATIONS*

J. T. GERAGHTY, M.D.
JOHN T. SHORT, M.D.
AND
ROBERT F. SCHANZ, M.D.
BALTIMORE

It is generally admitted that a single calculus, either in the ureter or in the kidney, which is of sufficient size to render impossible its spontaneous expulsion, should be removed by operative procedure unless there is some definite contraindication.

It would be inadvisable to attempt the removal of a calculus in a patient suffering from active pulmonary tuberculosis or advanced chronic nephritis unless some urgent complication demanded relief. In most cases of bilateral single stone, a careful study of the case will enable one to arrive at very definite conclusions regarding the line of procedure best adapted to cure the patient and secure the best functional result, both immediate and ultimate. Most urologists are agreed that in cases of bilateral renal calculus the stone should be removed from the better kidney first, except in cases wherein urgent symptoms demand immediate intervention on the other side. This view, however, cannot be followed too literally. This opinion holds true only when one kidney is almost completely destroyed and the other has a fair or good function. While in many cases the function will be the guide as to which side shall first be operated on, the position of the stone and the degree of obstruction which it is producing will be the determining factors. As an example, when on one side a stone is free in the pelvis and is causing intermittent blocking, or when a stone is impacted at the ureteropelvic junction with marked impairment of function, and on the other side a calculus which may lie in the renal tissue at a point where it is not causing destruction of renal function, the indications are clean cut to remove first the stone which is causing the rapid destruction of the kidney. In cases with an impacted ureteral calculus on one side, especially if associated with infection and a renal calculus on the other, the ureteral calculus should be removed first, provided only one side is to be operated on at the time. It has been our experience that with the reduced resistance of the patient to infections following a major operative procedure, a low grade chronic infection in the presence of obstruction may develop rapidly into an acute pyonephrosis requiring immediate operation. The possibility of this complication arising in any given case should be given due consideration in the selection of the side to be first operated on.

The special problem which we desire to discuss in this paper is that presented by cases of multiple renal calculi and the so-called coral or staghorn calculi, either unilateral or bilateral. When there are present multiple stones scattered throughout the kidney substance, and when, to attain any possibility of total removal, a complete nephrectomy would be necessary, it has been our experience that such a kidney should be left undisturbed. If the symptoms are such, either because of infection or pain that relief is necessitated, a nephrectomy should be done, provided, of course, the condition of the opposite kidney does not contraindicate this procedure. Complete nephrotomy is an operation attended with grave risk because of the danger of secondary hemorrhage, which may occur as late as the third week, as it did in one of our cases. In this case the nephrotomy was closed with two layers of chromic catgut by which the hemorrhage was completely controlled. On the twenty-first day following operation the patient suffered a sudden and almost fatal hemorrhage. Because of the necessity of suturing the kidney to control hemorrhage, extensive destruction of renal tissue occurs and a functional impairment results which might not be produced by the renal calculi in a long period of time. If the nephrotomy is done in the presence of infection, it will result in even greater damage to renal tissue; for to the destruction resulting from the mattress suturing is added that of impaired drainage of infection in the areas included in the suture. The probability of incomplete removal of multiple calculi, particularly in those cases having many small stones, adds to the difficulty of securing a good functional result with this operative procedure in this type of case. Finally, persistent urinary fistula is a not uncommon sequela and probably results from the subsequent dislodgment of small calculi overlooked at operation which result in obstruction requiring another operation for its correction.

We would not be understood as advising against operation for the removal of multiple stones in all cases. There are certain cases in which the stones are of a size and occupy a position which renders feasible their removal through a pyelotomy, through several small nephrotomy incisions or a combination of the two. Careful preliminary consideration of the number, size and position of the calculi, their relations to the pelvis and calices, and the presence or absence

* From the Brady Urological Institute, Johns Hopkins Hospital.

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of an extrarenal pelvis, will usually enable one to determine the feasibility of removal by a conservative procedure. In a recent case in which there were five calculi in four distinct portions of the kidney, it was possible, by means of pyelography, to show their presence in the dilated ends of the calices. There was also present a somewhat dilated extrarenal pelvis. The pyelography was followed by a slight renal colic which resulted in the dislodgment of two of the smallest stones into the renal pelvis. This suggested the possibility of dislodging the remaining calculi by producing mild renal colic, which was attained by overdistending the pelvis. The three remaining calculi were expelled into the renal pelvis after two dilatations. They were then removed through a simple pyelotomy incision, the roentgen ray at the present time showing an absence of calculi. The urine, which was previously infected, is now sterile.

Occasionally in cases of multiple calculi in which under ordinary circumstances operation would be inadvisable, a calculus may be dislodged into the pelvis or ureter, resulting either in great discomfort or in a serious destruction of the kidney. Under such conditions the obstructing calculus should be removed and no attempt made to remove the multiple calculi in the kidney substance. This should hold true particularly if the other kidney has a low functional value.

Case 1 is illustrative of this situation:

CASE 1.—A man, aged 45, seen in April, 1916, gave a history of a pyuria for a period of six years. The year previous a large irregular calculus was removed from the left kidney. The right kidney had a bacillary infection and a phenolsulphonephthalein excretion of 25 per cent. in one-half hour. The left kidney had a coccus infection and a phenolsulphonephthalein excretion of only a trace in one-half hour. Roentgen-ray examination revealed three stones 0.5 by 1.5 cm. in diameter scattered throughout the lower half of the right kidney. No operation was advised at this time. Eight months later the patient had a severe right sided renal colic. Examination following this revealed a stone in the upper ureter but no change in the position of the three shadows in the kidney substance. The stone in the ureter was removed, and no attempt made to locate the three calculi in the kidney substance. It has now been five years since this operation, and the patient has enjoyed excellent health. His total phenolsulphonephthalein excretion is 40 per cent. for one hour, this being his output for one hour when first seen. Roentgen-ray examination at the present time shows the renal shadows in about the same position without any increase in size.

There is another group of cases in which the kidney is literally filled with calculi, frequently of considerable size. In the majority of these cases the kidney will be found to be a mere shell with an extremely low function. If the condition just cited is unilateral and the opposite kidney of good functional value, a nephrectomy is usually indicated. When, however, the renal lesion is bilateral, as not infrequently occurs in this type of case, experience has shown that removal of these calculi, through a nephrotomy, has not led to any appreciable improvement in function, as the destruction is of such extent as to render impossible any regeneration. When a pyonephrosis supervenes, usually the result of a stone getting into such a position that it seriously interferes with drainage of the kidney, surgical interference is justified even in extreme cases. The procedure employed in such cases will vary with the position of the stone causing the obstruction. If this lies in the ureter, one might possibly be content with the removal of this stone alone, the stones in the kidney being left undisturbed. If, however, it is necessary to open the kidney, which is usually thin walled, a rapid and complete removal of all the stones can usually be carried out quite effectively. When the acute infection has rendered the kidney practically functionless, it is surprising how frequently the establishment of drainage is followed by a marked improvement in function.

Cases 2 and 3 are cited to show the marked improvement following the establishment of drainage:

CASE 2.—A man, aged 53, seen in October, 1919, had had two attacks of left renal colic some years before, during each of which a stone was passed. Roentgen-ray examination disclosed the right kidney filled with large calculi, filling the calices and pelvis. Another larger stone was present in the lower end of the right ureter. In the left kidney there were seen five small calculi scattered throughout the kidney. Ureteral catheterization revealed pus and cocci in the urine from each kidney, and a phenolsulphonephthalein excretion from the right side of 20 per cent. in one-half hour, and from the left side 4 per cent. was excreted in the same period of time. It was thought advisable to remove only the stone in the lower end of the right ureter. This was followed by marked improvement in the patient's general condition and comfort. There was also a considerable improvement in the renal function. Examination in May, 1921, revealed an excretion of phenolsulphonephthalein of 35 per cent. for the first hour and 15 per cent. for the second. This patient depends for his renal function on the right kidney, which is filled with calculi, the function from the left side being negligible.

CASE 3.—A man, aged 50, seen in December, 1914, had a recent increase in pyuria, some loss in weight, and an impairment in general health. There was no history of pain in the region of either kidney. Roentgen-ray examination disclosed several large irregular calculi and numerous smaller ones in each kidney. Ureteral catheterization revealed thick pus from the left kidney, with an excretion of a trace of phenolsulphonephthalein for one-half hour. The urine from the right kidney was turbid, containing pus, bacilli and cocci, and the phenolsulphonephthalein output for one-half hour was 11 per cent. The right kidney was explored and found to be greatly enlarged and with a thin cortex. A long incision was made through the renal cortex, and all of the calculi were steadily removed from dilated calices, the partitions between the calices being divided. The kidney was not sutured, but the bleeding was controlled by packing and a large tube was carried down into the pelvis. There was a rapid improvement in the patient's condition, and the blood urea dropped from 0.822 gm. per liter to 0.523 gm. One month later when the operative wound was almost healed, the patient suddenly developed fever with increasing blood urea. Ureteral catheterization obtained clear urine from the left kidney with a phenolsulphonephthalein excretion of 8 per cent. in one-half hour, while from the right kidney only thick pus appeared. The right kidney was explored, and the findings were similar to that previously noted on the left side. The same procedure was carried out as had formerly been employed on the left. The patient had a stormy convalescence, but eventually he recovered. Four months after the operation the patient's weight was normal and his general condition excellent. He had a total phenolsulphonephthalein excretion of 22 per cent. for one hour. He remained in fairly good health for almost four years, when he gradually became uremic and died.

This case illustrates very well the value of operating in this type of case when an acute pyonephrosis develops, and the possibility of prolonging life by relieving the pyonephrosis. It is advisable in these cases to control hemorrhage if possible by packing around a large tube rather than to use sutures, as a better functional value will be maintained. In order to pack successfully in such cases, the nephrotomy

incision should not extend from pole to pole, as usually all of the calculi can be removed through a large incision in the midportion of the kidney.

STAGHORN, OR BRANCHING CALCULI

The treatment of staghorn, or branching calculi deserves special consideration. The calculus to which we refer is one which fills the pelvis and calices, the roentgenogram resembling very closely a pyelogram. They are practically never the cause of renal colic and seldom give rise to more than slight uneasiness or discomfort in the kidney region, and their existence is frequently an accidental discovery. It has been our experience that the function of these kidneys is usually surprisingly good even in the presence of infection. We have observed one case during a period of eight years with this type of calculus associated with a mild infection. The function of this kidney when first seen, as determined by phenolsulphonephthalein, was only slightly impaired and remains the same today. This type of stone is only exceptionally the cause of obstruction resulting in hydronephrosis or pyonephrosis. When these complications do occur, they will usually be found to be the result of downward extension of the stone into the ureter.

The removal of these calculi always necessitates a complete nephrotomy, and the renal impairment resulting will usually be greater than would be produced by the stone over a period of years. Furthermore, in the removal of the calculus, small or even fair sized fragments may be overlooked, which, if they do not result in the production of a permanent urinary fistula, will certainly lead to the reformation of calculus. These kidneys should rarely be operated on, and when operation is necessary, nephrectomy should usually be done.

CONCLUSIONS

In deciding on operation in any given case, one is influenced by factors of immediate or remote importance. The development of an acute pyonephrosis, a complete ureteral block or other conditions may require immediate interference. In the other cases the possibility of preventing the development of future complications which may lead to renal destruction may justify the removal of the calculi. In any case, one should carefully consider whether the removal of the calculi will cause greater renal destruction than will result from the presence of the stones. One should further consider whether the improvement in the kidney condition which will follow the removal of stones will justify the operative risk. And lastly, one should consider the feasibility of the complete removal of all the calculi. A conservative attitude in the handling of many of these cases will be found to lead to better results as far as concerns the comfort of the patient and his duration of life.

ABSTRACT OF DISCUSSION

DR. FRANCIS R. HAGNER, Washington, D. C.: The dislodgment of calculi in the pelvis by overdilatation of the pelvis facilitates the removal of these calculi without injury to the kidney stroma. I feel sure that Dr. Geraghty is right in regard to the large stones. These patients should not be operated on unless they have obstruction. Every patient should be regarded as an individual case. The use of the roentgen-ray catheter when there are stones, bilateral or otherwise, and pyelograms are most important when the calculi are in the stroma. It is much safer to remove the stone by pyelotomy than by opening the kidney. Formerly we did not hesitate to split the kidney from pole to pole for the removal of calculi, but now we know we should save as much of the kidney structure as possible by making a small incision for removal of the calculi. I have observed two or three cases in which the kidney has been split from pole to pole. This procedure destroys at least one third of the excreting structure of the kidney. If there is a constant backing up of pus and blood into the pelvis of the kidney, the only thing to do is to remove the kidney. Sometimes these patients are in a very precarious condition. In a few cases I was afraid to remove the kidney at the primary operation. On draining the pus and blood the patients at once began to improve and when there has been a low phenolsulphonephthalein output, the function has improved. I have gone in subsequently and removed the shell containing the remains of the kidney structure. I have done this also in cases of kidney tuberculosis when drainage only was performed on account of the critical condition of the patient and followed at a later date by an intracapsular operation. I did this operation in one case about ten years ago. The patient is in very good condition.

DR. JOHN H. CUNNINGHAM, Boston: Bilateral renal stones are found much more often than we suspect them to be present. A patient has symptoms of renal calculi on one side and we often find stones on the other side. It is most important, for that reason, to pay especial attention, in the diagnosis, to the possibility of stones on both sides. We should, as a rule, operate in cases of bilateral stones on the kidney that is proved to be the best, and establish the function of that kidney to the best degree possible before attacking the other kidney. Naturally, this rule applies only to kidneys, both of which are giving symptoms. When bilateral renal stone exists, and the symptoms are unilateral, this kidney should be attacked first, and often we never touch the other kidney because no symptoms develop within it. Regarding the complication of stones in the ureters, we are apt to encounter a condition that requires bilateral operation simultaneously because of anuria. If the patient's condition permits, both stones may be removed simultaneously. On the other hand, if the patient's condition is critical, nephrotomy is the operation of choice in bilateral renal obstruction due to stone because it is more easily done. Some years ago I did some experimental work on the excretion of urine and dyes from kidneys following nephrotomy. The problem was raised by doing a nephrotomy on a patient with a single kidney which contained stone, the other kidney having been removed for stone by another surgeon. There was anuria for several hours following the operation. This suggested to me that an operation on a kidney might disturb its function for an indefinite period. In this connection we carried out a series of experiments on rabbits, doing a nephrotomy, and after the animals recovered and became normal we operated on the other kidney, draining some through the parenchyma, others through the pelvis. In every instance there was a temporary cessation of renal function. The matter of drainage proved something. Those drained by rubber tube through the parenchyma drained quicker than did those drained by gauze, and those drained through the pelvis drained quicker than did those through the parenchyma, and a rubber tube was preferable to gauze. If it is convenient at the moment to drain through the pelvis, we should do so. If we drain through the parenchyma, we should drain with a tube and not with gauze.

DR. FRANK HINMAN, San Francisco: I have a great deal of hesitancy in differing with Dr. Geraghty, but I feel that patients with bilateral stone should be operated on in almost all instances. I have had three patients who had these large staghorn stones, with a very low phenolsulphonephthalein output who have had successful operations done in two stages, and the phenolsulphonephthalein output is now normal or nearly so in all. One has been well for four years. He had had pyuria for twenty years. This persists, but it is nothing to what it was before the calculi were removed, and his renal function has recovered to nearly normal. The kidney that is infected in association with stone will continue to be

infected, and destruction will be progressive unless the stones are removed and the only stone that should not be removed is the small one that is silent, lying up in some calix unassociated with kidney infection. The amount of functional recovery renal tissue will show when given free drainage, and the demand for it by bilateral insufficiency is sometimes unbelievable. Decision for delay in operation in these bilateral stag horn stone cases should be regarded always as temporary and never as final. Preliminary nephrotomy is often indicated or necessary in order to carry these patients through operation. If the kidney is drained by nephrotomy before the large stones are removed, it has recovered function sufficient to carry the patient through the next step of the operation.

DR. WILLIAM E. STEVENS, San Francisco: I think that almost every one will agree with Dr. Geraghty that an attempt should always be made to preserve both kidneys in the presence of bilateral nephrolithiasis. An interesting case of bilateral calculous pyonephrosis came under my observation some years ago. Both kidneys showed diminished function, and the urine contained a large number of pus cells. The worst kidney was operated on first. The upper and lower lobes of this organ were mere shells, and these, together with a portion of the greatly dilated pelvis, were resected. Seven stones were removed from the pelvis at the same time. Two months later, the opposite kidney was exposed and presented the same picture. The upper and lower poles were resected, and six stones were removed from the pelvis of the kidney. Although the urine from both kidneys contains a number of pus cells, the patient suffers no discomfort and is able to follow his usual occupation, that of a barber. He was operated on nine years ago. I think that partial nephrectomy should be considered in cases of this type.

DR. EDWARD L. KEYES, JR., New York: At present I feel myself in more difficulty in coordinating successful treatment in those cases than in other cases. That is, I try harder to do it right and actually come out more often wrong. Dr. Geraghty made one statement that should go into the textbooks: that the better kidney should be operated on first. If there is not much choice between them and if obstructive conditions exist, relieve that obstruction first. That may not improve the patient's condition much, but it will help. I do not agree with Dr. Geraghty about the coraliform stones. That type of stone you do well to take out. I differ with Dr. Geraghty about one thing, with regard to pyelograms of stones that fail to come down, shaking them out of the calices. I think that one can shake them out better when operating on the kidney. One can shake them out with forceps or even with the finger or, as Dr. Caulk said yesterday, tap them out. Do not pack kidneys; put in a tube.

DR. A. J. CROWELL, Charlotte, N. C.: The pyelogram is of infinitely greater value in locating small stones in the kidney pelvis than in assisting to force the stone out of the calix into the pelvis. I want to agree with Dr. Geraghty regarding the bilateral stag horn stones. Leave them alone if painless, and the kidney is free from infection and its functional activity good. Considerable parenchyma destruction will be produced by their removal through cortical incision, and reformation is almost certain. When we can remove a stone through a pyelotomy opening without producing undue trauma, it is quite well to do so, even though they are bilateral. As to which you should remove first—we all have our ideas about that, but when there is infection and you can remove a stone through a pyelotomy opening, the stone should be removed. But if we have to go through the parenchyma it is better to leave it alone.

DR. EDWIN BEER, New York: The silent bilateral large stone filling the kidney should be left alone. Why? Because every one agrees that they reform. So, in addition to the trauma to the kidney you have the reformation of stones. I remember one case in which I had to do five operations on the remaining kidney for calculus. I do not believe any kidney with fair function should be removed. If the kidney structure is so nearly destroyed that there is no value to the kidney, it should be removed. In view of the fact that the patient has bilateral involvement, it is always safer to preserve any kidney tissue possible. In the course of these stone operations, the ureter should be temporarily occluded with a band of catgut close to the pelvis so that no fragments slip down the ureter. That often happens and leads to secondary uroterolithotomy. About closing the incision: If you use the usual mattress stitch you are liable to cripple a lot of tissue. During the last few years I have used a straight needle double threaded and underpin the knots with fair sized pieces of fat taken from the wound. This is particularly useful in decapsulated kidneys. It prevents cutting through and strangles less parenchyma.

DR. JOHN R. CAULK, St. Louis: The stone problem is a very complicated one. My conception is that a stone in the kidney is actively or potentially a menace—actively, if accompanied with infection; potentially, if not. Even if the silent stone is not subjecting the kidney to retention, there is a certain amount of resistance to the outflow from the kidney tubules. We often get a false impression of kidney function when there is a foreign body; and it is so well known that many kidneys have such good function after removal that it is my policy to remove all stones, whether silent or not. If there is no infection at the time of operation, sooner or later it will develop. While experiments seem to indicate that nephrotomy sacrifices a lot of renal tissue, it has been my impression that that is not true. In the removal of a stone by a clean cut incision, not such a large wound is necessary; and it has been my experience that these kidneys, even though they have low function, after you have removed the stones and nephrotomized them, come back to good function. We should conserve the kidney; and while it may be conservative to leave these stones in, my conservative policy is to take them out wherever they are.

DR. RICHARD F. O'NEIL, Boston: I was interested to hear Dr. Geraghty comment on the very good renal function sometimes observed in the presence of these large branched calculi. That has been my experience. I have recently seen a man at our clinic who had large bilateral stag horn calculi and a surprisingly good renal function. In spite of this, however, I feel that an operation on either of the kidneys would be so destructive to the renal substance as to be entirely contraindicated.

DR. JOHN T. GERAGHTY, Baltimore: I do not believe that Dr. Hinman or Dr. Caulk disagree with me very much. I agree with Dr. Caulk that any patient with bilateral calculi who is septic should be operated on. There is no chance without operation, but there is some chance with operation. There is no function after chronic destruction of the kidney, but only before the tubules are destroyed. I agree with Dr. Hinman that there are cases in which operation should be performed. Some patients should be operated on because the calculus occupies only one part of the kidney, and operation always should be attempted in the presence of an acute condition. The thing that will make you operate in any given case is the feasibility of getting all the stones, particularly when multiple stones are scattered throughout the kidney. If you will investigate those stag horn calculi you will find frequently that multiple fragments are scattered through the calices, and very rarely do we get all the fragments out in any case.

Colles' and Profeta's Laws.—In 1837 Colles dedicated his Practical Observations on the Venereal Disease to Sir Astley Cooper. In an interesting chapter on "Syphilis in Infants," he says (p. 285): "It is a curious fact that I have never witnessed nor ever heard of an instance in which a child deriving the infection of syphilis from its parents has caused an ulceration in the breast of its mother." This statement, which was found to be true, afterwards passed current as "Colles' Law," though it is sometimes called Baumes' law; as Baumes noted the same fact in 1840, three years after Colles had enunciated it. It was not until 1865 that Guiseppe Profeta pointed out that "a healthy child born of a syphilitic mother can be suckled by her or by a syphilitic wet nurse with impunity," which is Profeta's law.—*Brit. Jour. of Surg.*

PROSTATECTOMY IN BAD SURGICAL RISKS*

H. G. BUGBEE, M.D.
NEW YORK

If one has the greatest interest of the patient at heart, the first consideration in dealing with a pathologic condition is to relieve the lesion in such a manner that the patient's life will be preserved; second, that function will be restored, and third, to accomplish such a readjustment in a way that entails the minimum of pain and inconvenience.

The slow evolution of the various methods employed for the relief of prostatic obstruction has brought us to the point where we all agree that the object in view is the removal of the obstruction, so far as this is possible. Our most satisfactory results are obtained in the adenomatous enlargements. The indication here is to remove the prostate. Various contraindications to this operation have been brought forward—and rightly so, in view of the manner in which the operation has often been performed in the past. The present technic of prostatectomy, step by step, has removed many of these contraindications. During the past two years patients have been carried through this operation and placed upon their feet, with urinary systems properly functioning, whom formerly I would have looked on as sure mortalities—and I believe many of them would have been.

We do not have to go back many years to find speed of operation given as the greatest factor in the success of the removal of the prostate. It was thought that this pathologic condition, which had slowly progressed, often over a period of years, and which had resulted in interference with the working of a system whose function it is to eliminate poisons from the body, the progress of such a pathologic condition endangering the immediate organs involved and poisoning the entire system, must be relieved by an operation which, if not performed at once, and if not executed in a few minutes, would certainly eventuate in death. This is not logical. A condition arrived at through the slow progress of a pathologic entity, with far-reaching complications, cannot be relieved at once. The time necessary for its relief will be more or less in proportion to the time involved in the culmination of the pathologic process in the final condition.

We may talk of two-step prostatectomy—I myself do not care how many steps there are. The objects in view are as few shocks as possible during the readjustment, and a live patient at the end.

METHOD OF TREATMENT

The prime indication with these patients is to improve elimination. The first consideration is to prevent absorption from the bladder and to relieve the kidneys; the next is to promote elimination in other systems which are laboring under the unusual amount of work thrown upon them. To prevent further absorption from the bladder and to relieve the kidneys of back-pressure, drainage of the bladder is indicated. Too sudden institution of this measure is often disastrous. I have seen patients in a uremic state for days after a complete emptying of the bladder at one sitting by catheterization, and I have often seen this after suprapubic drainage when retention of urine has been complete or incomplete but of long standing.

In a patient with retention, carrying over 6 ounces of residual urine, the bladder is never emptied at the first examination, if he has not been catheterized before. In so-called clean cases, those free from infection, the patient is seen several times, a number of days apart, draining off a little more each time, unless it is possible to place him in bed at once. With a markedly overdistended bladder, as long as two weeks have been allowed to elapse before completely emptying the bladder.

There are very few cases that cannot be catheterized by using a local anesthetic in the deep urethra, by employing the proper type of catheter for the individual case, and by exercising care and patience in manipulation. Rarely a suprapubic puncture, with its relief of the pressure, will make it possible to pass the catheter when, at first attempt, pressure and spasm made this impossible. When the catheter has been introduced, fasten it in and slowly draw off the urine, a little at a time, replacing part of the bulk each time with boric acid solution, finally emptying the bladder. In these cases the catheter should be retained until the patient shows no signs of uremia; a suprapubic drainage may then be established. Even after catheter drainage this step will often result in a decided return of uremic symptoms, showing that suprapubic drainage is more complete than that by urethral catheter.

Patients with incomplete retention, or those who have been accustomed to catheterization, may usually be drained at once suprapubically.

It is entirely possible to establish suprapubic drainage without completely emptying the bladder at the time the drainage is established. In fact, the bladder may be emptied a little at a time, in exactly the same manner as by urethral catheter.

Suprapubic drainage is carried out preferably under local anesthesia, which does not interfere with the intake of food and fluids, and causes less disturbance than even gas-oxygen anesthesia. The incision is made to the bladder, and the peritoneal fold is carefully raised. The bladder, being filled, comes up into the wound. It is carefully walled off, seized with toothed clamps, and, being well steadied, is opened by a small puncture wound made completely through it. The Pezzer catheter is quickly inserted, being stretched over an introducer. As soon as the mushroom is in the bladder and the catheter is released from the introducer, it is clamped; the tube completely fills the opening in the bladder wall, and there need be no leakage alongside. A suture on either side insures a tight closure, and the tube, clamped off, can be released from time to time, and as much or as little urine as desired be allowed to escape.

While bringing the patient to this stage, much may be accomplished by giving fluids by mouth and by rectum, in as large amounts as can be assimilated. Free elimination by the intestinal tract is important. A mild cathartic for the upper tract, and colon irrigations below, will maintain a free exit and prevent absorption. It is well to have the patient out of bed as much as possible; this aids the circulation, strengthens the patient, and improves the morale.

* Read before the Section on Urology at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

The gastro-intestinal symptoms, a clean tongue, the absence of distention, and an appetite, are fair indications of the patient's condition. A high blood pressure is to be preferred to an abnormally low one. The pressure often fluctuates, and is an important index of the circulation and renal condition. The intravenous administration of gum glucose may prove to be a valuable aid in its stabilization.

Renal function tests are important during this stage, while the patient is slowly acquiring a new balance. The actual figures on blood chemistry, phenolsulphonephthalein output, and specific gravity, are not as important as ascertaining the fact that a new level has been established which shows little variation. When this level has been established, whether the phenolsulphonephthalein output be 12 or 50 per cent., blood urea 18 or 40 mg., if they remain stationary on repeated estimations, if the tongue is moist and clear, if the patient takes nourishment in sufficient quantity and assimilates properly, one may enucleate the prostate.

The difficulties of enucleating the prostate through an old sinus are much exaggerated. Operation under gas-oxygen anesthesia, with previously administered anodyne, or possibly sacral anesthesia, in a patient in a stabilized condition, does not require great rapidity. If the drainage wound has been placed in the center of the abdominal scar, the sinus may be slightly enlarged below. The peritoneum may be avoided easily, and, except in fat individuals, the enucleation may be executed with one finger when the prostate has been lifted up from below by an assistant's fingers in the rectum. The greatest difficulty may be in the removal of a large lobe through the sinus after enucleation. This is best accomplished with special forceps. The special sound is now passed through the urethra, the urethral tube of the Pilcher bag fitted over the end of the sound, and the bag, as it is filled with water, drawn down into position. Tight traction is rarely required to control the bleeding, and with slight traction bladder drainage takes place at once through the urethral tube. It is now my plan to pack loosely around the margin of the bag in the bladder, and with the same strip to pack the sinus loosely, using as a rule but one silkworm-gut suture partially to close the small external wound.

In this manner, with little traction on the bag, tenesmus is slight or absent, the dressing above is dry, and only a small sinus remains. The patient is soon placed in a sitting position in bed, and is filled with fluids. The pulse rarely goes up, and drainage continues as before.

The following day the one strip of packing and the bag are removed, leaving a bladder free from clots. A mushroom catheter is then inserted with an introducer, through the suprapubic sinus; the sinus rapidly contracts down upon the tube, and often, with no leakage, the patient is dry at once. The scrotum is kept elevated, and as a rule the bladder is not irrigated. The flushing comes from the freely accelerated kidney elimination. The bowels are kept clear by irrigation and mild catharsis.

As soon as the patient feels equal to it, often the following day, he is placed in a chair. The wound is largely healed; in fact, it is for the most part an old scar, and thus there is no danger of a weak wound.

For a time I thought that the sooner the sinus healed the better; but I have learned by experience that slower healing is more to be desired. While the prostatic cavity is filling with granulations there is less danger of epididymitis if drainage is maintained above. Often, even with the Pezzer catheter in position above, the patient begins to void about the seventh day. The catheter is retained about eight days, when a soft urethral catheter is inserted by means of an introducer, and retained while the suprapubic sinus is packed to the bladder wall, usually with balsam of Peru gauze. The packing is changed and shortened every two days, the sinus in this way healing solidly from the bottom, is closed off, on the average, in two weeks and healed to the surface in another week.

In this way patients recover; they have not gone through an operation but a period of readjustment and repair. Such a technic has made it possible to go through a period of two and a half years with but two deaths, each from pulmonary embolus during the period of convalescence.

REVIEW OF CASES

A brief review of several of these cases will show that many of the patients, at first, were in a desperate condition, patients who, I am sure, would never have survived any sudden change or shock.

CASE 1.—M. R., aged 69, had had increasingly frequent, difficult urination for years; for eleven months, retention, and led a catheter life. There was great pain and distress in the bladder; loss of weight, and emaciation. The temperature was 102 F.; pulse, 110. There was a large, adenomatous prostate, involving the lateral and median lobes. The bladder contained 40 ounces of foul urine, loaded with pus. There was a vesical calculus the size of an English walnut. The patient refused open operation; litholapaxy was performed, with catheter drainage; one month later, suprapubic drainage, followed by uremia. The patient was very sick for three weeks, with temperature ranging to 104; pulse, poor; blood pressure, 220; abdominal distention, vomiting, coated, dry tongue; phenolsulphonephthalein output too low to estimate; blood urea, 67 mg. After three months of drainage, the general condition markedly improved; phenolsulphonephthalein fixed at 20 per cent.; blood urea, 40 mg. The prostate was enucleated, with no reaction whatever. The suprapubic sinus was closed in ten days. The patient is well today.

CASE 2.—J. K., aged 78, who had been under observation for six years, had increasing difficulty, and frequent urination. There was a large, adenomatous prostate, involving the lateral and median lobes. The patient was feeble; there was a valvular heart lesion and marked myocarditis. Kidney function was poor. The blood pressure ranged from 95 to 105. In 1919, there was retention while on a motor trip. The patient was catheterized, infection and epididymitis resulting. He had been on a partial catheter life for one year; then suprapubic drainage was instituted, which was followed by uremia, with its characteristic symptoms; also drop in blood pressure, irregular pulse, and poor heart action. After three weeks of drainage the patient's condition seemed to be stabilized, and the prostate was enucleated. A stormy course ensued, with pneumonia, extremely weak heart, and bilateral phlebitis. The wound was closed in four weeks, the patient had a steady convalescence, and is in better health today than for many years. Two points are paramount in this case: Slow procedure and absence of hemorrhage made a successful outcome possible.

CASE 3.—V. S., aged 90, under observation at intervals for three years, when first seen, in 1917, presented an adenomatous prostate with three large lobes, and a bladder containing six calculi. The patient refused open operation. The calculi

were removed by litholapaxy, and to render catheterization easier, a furrow was cut through the median lobe. During 1920 he returned with more calculi. Although myocarditis and poor kidney function were present in a very old man, operation was advised. The bladder was drained suprapubically and the calculi removed. Uremia, poor heart action, and low blood pressure (95) supervened. The phenolsulphonephthalein excretion was unreadable; blood urea, 65 mg. Two months of drainage were required before stabilization was established. At this time the phenolsulphonephthalein output averaged 13 per cent., and blood urea 38 mg. Enucleation of the prostate was followed by no reaction. The sinus closed in ten days, and the patient journeyed alone to his home, 1,500 miles away, three weeks after operation.

CASE 4.—E. S., aged 68, had had increasing frequency and difficult urination for years; there was complete retention one month before he came under observation in May, 1920. When he was first admitted to the hospital, the bladder contained 54 ounces of foul urine, so thick with pus that it was evacuated through the catheter with difficulty. Double epididymitis was present. The temperature was 105, the pulse 124 and of poor force; the patient was septic; renal function was low; phenolsulphonephthalein unreadable; blood urea, 56 mg. Catheter drainage, with bladder and colonic irrigation, for four weeks, was followed by suprapubic drainage. The blood pressure was low (100), the heart action weak; there were symptoms for two weeks. After two months of drainage, the patient became stabilized. The phenolsulphonephthalein output was 16 per cent.; urea nitrogen, 36 mg. Enucleation was followed by no reaction. The suprapubic sinus closed in eleven days. The patient today is in better physical condition than in years. Bladder function is normal.

CASE 5.—J. T., aged 78, who had had increasing frequency, with difficult urination and hematuria for ten years, with retention for two months, had a large, adenomatous prostate, with three definite lobes. The blood pressure was 340. There was a valvular heart lesion, with dilatation. Suprapubic drainage was followed by uremic symptoms. After four weeks of drainage, the patient's condition became stabilized. The blood pressure was 170, the heart action improved; phenolsulphonephthalein, 28 per cent.; blood urea, 32 mg. Hiccup after establishing drainage lasted ten days. Enucleation of the prostate was followed by uremia, with hiccup for three weeks. The wound closed in eighteen days. The patient has been well to date.

CASE 6.—E. C., aged 79, who came under observation in May, 1920, had had retention and overflow following urinary symptoms of many years. There was median lobe enlargement. The bladder was well above the umbilicus. The blood pressure was 100; there was a valvular heart lesion, and myocarditis. Three weeks were allowed to elapse during complete emptying of the bladder by an indwelling catheter. With the first complete evacuation the patient became uremic. He improved rapidly, and one week later suprapubic drainage was instituted. Again uremic symptoms were present; the heart action, poor. Ten days later, the phenolsulphonephthalein output was 19 per cent.; blood urea, 22 mg. The patient has been out of bed throughout. Enucleation of the prostate was followed by no reaction. The sinus closed in eight days. The patient has been well to date. The bladder function is entirely satisfactory.

CASE 7.—J. C., aged 76, had increasing frequency and difficult urination, resulting in retention in June, 1920. There was a large, adenomatous prostate, with three definite lobes. The mental condition was poor; myocarditis and valvular heart lesion, and well marked nephritis were present. Catheter drainage was performed for two weeks, during which the patient had daily chills. The mental condition at times was difficult to control. Suprapubic drainage was followed by moderate uremia; the mental condition remained unchanged. Ten days later the prostate was enucleated, the patient refusing to wait longer. After prostatectic enucleation the patient was irrational for four weeks. The condition was diagnosed as epidemic encephalitis by Drs. Tilney and Collins. There was improvement of the mental and the renal condition. Closure of the sinus occurred twenty-one days after operation. The mental symptoms slowly disappeared; the patient is now in good condition.

CASE 8.—W. E., aged 66, had had increasing difficulty and frequency of urination, and failing health for years. There had been retention for one year. He was refused operation for the removal of a large, adenomatous prostate by an able surgeon because of poor physical condition and bad renal function. When he first came under observation the patient was septic, the temperature ranging to 103 F.; poor heart action, myocarditis advanced; gastro-intestinal and renal functions low. There was complete retention, the bladder loaded with foul urine. Suprapubic drainage was followed by uremia. Six months' drainage was necessary before the patient's condition warranted an enucleation of the prostate. The phenolsulphonephthalein output was now 21 per cent., and urea nitrogen 33 mg.; heart action regular. Removal of the prostate was followed by a reaction due to kidney insufficiency which lasted ten days. The recovery was progressive, the sinus closing in twenty-three days. The bladder function is now normal. There is good drainage of two pyonephrotic kidneys, and the patient is able to be about in comparative comfort. The heart action is decidedly improved.

CASE 9.—J. T., aged 69, first seen in July, 1920, had complete retention of urine; the bladder was greatly overdistended; the urine was loaded with pus. The patient was septic. Arthritis involved all the joints of the extremities, so that the patient was helpless. The heart sounds were not audible over the pericardium. Suprapubic drainage was followed by slow improvement in sepsis, heart, joints and kidney function. Six months of bladder drainage showed, on the patient's return, no fever; fair gastro-intestinal function, and heart action weak but more regular, dropping every fourth or fifth beat. The phenolsulphonephthalein output was 13 per cent.; blood urea, 29 mg. The prostate was enucleated, with little reaction. For six days the heart action was weaker but steadier. The kidney function did not become worse, and the patient went on to an operative recovery, the sinus closing in twenty-eight days. Last reports from this patient, six months after operation, are that he is able to be about some on his feet, to feed himself, has little pain in the joints, and the bladder function is satisfactory.

COMMENT

These cases were as poor surgical risks as I have seen. I could go on citing others, with various types of complications, some with very high blood pressure, others with very low, various degrees of cardiac and renal insufficiency, etc., but these illustrate what may be accomplished by a technic such as I have outlined.

SUMMARY

Old age is not, in itself, a contraindication to operation, and has probably been overestimated as a risk.

Even in the presence of advanced cardiac and renal complications, prostatectomy may be carried out with success by a step-by-step process, improving the local condition of the urinary organs with each step, and giving much attention to the patient's general condition as one progresses. Hemorrhage should be avoided at the enucleation of the prostate, much of the shock and renal insufficiency being thus prevented.

The mortality resulting from such a procedure will be slight. Pulmonary embolus is always a possibility, and probably a more frequent occurrence than after most other types of operation.

40 East Forty-First Street.

ABSTRACT OF DISCUSSION

DR. HERMAN L. KRETSCHMER, Chicago: I was glad to hear Dr. Bugbee emphasize the exercise of care in emptying these bladders. It has been one of the old rules in genito-urinary

work to empty the bladder slowly. Since the introduction of prostatectomy I think we have largely lost sight of that fact. Many times one sees a bladder emptied at operation by simply making a large incision and letting all the urine out. Some of those patients have died and the verdict has been: "He was in such bad condition that he could not stand any sort of operation." I wonder whether some of the deaths were not due to too rapid emptying of the bladder. If it is wrong to empty an overdistended bladder rapidly with a catheter it is doubly wrong to do so by operation, because the patient then has the added trauma of the operation. Dr. Bugbee says he takes into consideration not only the blood chemistry and the functional tests, but also the general condition of the patient, and that is sound logic. The clinical findings should be corrected with the functional tests. I like the use of his term, "when the patient becomes stabilized." I should hesitate to get the patient up the next day. I do not think he should be kept in bed too long, but I believe he should be kept in bed more than one day. I never get patients up the next day—usually about the fifth. The author mentioned some patients having died of embolism and I wondered whether getting them up so early had anything to do with this. We do not get them up so early in other operations because of the possibility of emboli. We know this is true in operations on the female. Formerly, we did not pay much attention to the blood pressure, until Peacock, seven or eight years ago, reported a drop in blood pressure following suprapubic drainage, and that has been our experience. The largest drop I can recall now was 120 mm., without having any deleterious effect on the patient.

DR. BRANSFORD LEWIS, St. Louis: I am heartily in accord with the sentiment of this paper as well as with the specific expressions. I believe the keynote of the paper is embodied in the word "preparation," and that is where the great progress in the advance of prostatic surgery has been effected in the last ten or fifteen years. I wish to support Dr. Bugbee's statements with regard to the innocuousness of the urethral catheter as a means of preliminary drainage. It is easily borne by most patients and for an indefinite period. I drained one patient for nine months by urethral catheter before I was able to bring myself to operate on him, and in the meantime he went through a number of different complications and disorders connected with the intestines, kidneys, heart and other organs of the body, and finally, after nine months, we got him into such condition that we thought he could go through suprapubic removal of the prostate. We did this in two stages, and he is living today, over 80 years old. A point about this drainage and its connection with suprapubic cystotomy is that the drainage effect and the improvement should be attained before the suprapubic cystotomy. One can get urethral drainage just as effectively as he can by suprapubic cystotomy. He can control the case better in this way, can have an ambulatory patient who can at least get around in a wheel chair while wearing the catheter and can be in the park in the sunlight, and can keep this up for two or three weeks. The first step of the suprapubic operation should not be done until the drainage has been carried out, for that is the first stage of the operation. Then under short general anesthesia you can do the suprapubic cystotomy, after which the patient is in just as good a condition as when he went on the table; and then within a week or so you can finish the operation and have good results.

DR. ROBERT H. HERBST, Chicago: I was pleased to hear attention called to the importance of supporting the scrotal contents immediately following prostatectomy. Many of these old prostatics have a coexistent infection in the seminal vesicles, and during the enucleation of the gland we are likely to force some of the infected material down the vas, producing an epididymititis. The patient whose scrotum is well supported is rarely troubled by this painful complication. I usually attach a sling to the abdominal binder, which supports the scrotum better than the commonly used suspensories.

DR. HERMON C. BUMPUS, JR., Rochester, Minn.: I was much interested in what Dr. Bugbee said about the decompression in these cases. We have used the method described by Van Zwalenburg in more than thirty cases, and have found it most satisfactory. The method consists of inserting a catheter clamped at the end to prevent the escape of urine from the bladder. To the end of this catheter is attached a rubber tube 6 or 8 feet long filled with boric acid solution; at the distal end of this is a "U" tube, which is slowly brought down until the pressure of the bladder is equalized by the column of boric acid in the rubber tube. At this point the urine is allowed to run over into a receptacle hung at the foot of the bed, the receptacle being lowered an inch each day. Sometimes it takes a week or more to bring the receptacle down to the level of the patient, when there is much retention; at other times it takes only three or four days. Since we have been using this method we have had no bad results.

DR. A. M. WOSE, Syracuse, N. Y.: These bad surgical risks are the most trying cases, and the success we have with them is due to careful detail and well aimed interference. I agree with Dr. Lewis that prolonged drainage is an essential point. My idea is the perfected drainage, and in that connection I would say, Not much antisepsis in the irrigation of the bladder. I think we are given to do a little too much in working on these bladders. We come to find out that Nature is protecting these bladders by immunization, and we do more harm by going in and attempting to clean them out. In my opinion, drainage with the catheter, if possible, is the main thing in these bad surgical risks. Then, if we do not meddle in our preliminary catheter drainage, we are apt to do our cystotomy too soon. Dr. Bugbee made it clear that uremia follows haste. Remember that these patients are mentally, organically and many times clinically fatigued and we have to do everything we can to fortify that situation. I am not in sympathy with the two-stage operations in these cases. In my judgment, the drainage is the first stage and then the adenoma can be enucleated thereafter. A preliminary cystotomy proves often to be a last resort from which these patients do not rally. Thus we wear out the old men before we have them on the road to recovery. I know what the advocates claim for it, but notwithstanding that I still cling to the one-stage operation. Then when you come to the second stage of these bad surgical risks, you may regret that you have taken the second stage, for there may be fibrosis and the patient's life may be snuffed out on that account. I think we all, sooner or later, do regret attempting the suprapubic prostatectomy in fibrotic cases. The perineal operation is the better choice for the small, hard prostate.

DR. ARTHUR L. CHUTE, Boston: The thing that impresses me most is that Dr. Bugbee has been using gradual drainage by catheter for the prostatics with overdistended bladder. The two-stage operation interested me very early, and, for the most part, I have followed that method in the last few years. That procedure gives excellent results in most of the cases of overdistended bladder with low gravity urine; but every once in a while one of these patients' kidneys shuts down and I cannot get them to start. Dr. Bugbee's procedure has been very successful in his hands in meeting this situation, and yet it is pretty much the same thing that we were doing ten or twelve years ago and gave up for the two-stage operation because it was not invariably successful. In the light of Dr. Bugbee's experience I shall be encouraged to take up preliminary catheter drainage again, but I fear that there are some of these patients whose bladders are overdistended, with light gravity urine, whom we shall lose no matter what method we follow.

DR. JOSEPH HUME, New Orleans: The fact that it takes so long to stabilize some of these patients is because we overlook some bilateral kidney infection. After the preliminary drainage I do the first stage under local anesthesia, and then, in that stage, I practice catheter drainage about once or twice a week through the wound, washing out the kidneys. In many instances many of these patients can be saved by this procedure.

DR. GEORGE R. LIVERMORE, Memphis, Tenn.: Drainage is most important in preparing these patients for operation. When you have diminished the amount of fluid in the bladder

each day, when uremic symptoms develop, if you will increase the amount of fluid you last put in you will decrease these symptoms. In the second step, if we make a lateral incision through the fascia it makes a more open incision and prevents the possibility of tearing through the peritoneum. Of all the points following operation, hemorrhage is the most important, and every means possible should be employed to prevent it. Many patients die of uremia because of the fact that they have lost more blood than they could possibly stand, and these patients are said to have died from uremia when the death was really due to hemorrhage. High blood pressure seems to be no contraindication to removal of the prostate. Dr. Bugbee's plan of getting his patients up early is good. He probably does not mean that he gets all patients up the day following operation, but selects his cases. The change of position in these patients is of great importance so that hypostatic pneumonia will not set in. Also, we should keep them warm, particularly when carrying them through the operating rooms and hallways back to bed, so as to prevent the development of pneumonia and shock.

DR. LEO BUERGER, New York: I believe it usually advisable to give preliminary treatment with permanent urethral drainage through the retention catheter. This is not always feasible. I do not agree with those who would do the prostatectomy immediately after catheter drainage. At least three cases that have convinced me of the incorrectness of this procedure. A man had a temperature of from 102 to 104 F., with a zero output of phenolsulphonephthalein. He looked anemic, and had toxic symptoms in spite of catheter drainage. At the end of three weeks he still had a zero phenolsulphonephthalein output. I then decided that a suprapubic cystotomy should be done and, following this course, was able to do the enucleation without any trouble three weeks later. That case led me to make a study of the specimens after operation, and I came to the conclusion that the so-called back presure was due merely to urinary renal retention and not to actual back pressure. I studied a number of bladders obtained at postmortem in which there was enormous hypertrophy of the bladder wall with considerable elongation of the ureter in its intramural course. In none of the cases was I able to demonstrate any enlargement of the ureter at the orifice as we see it in congenital hydro-ureter hydronephrosis. I tried to force the bladder contents upward through the ureter by pressure and was unable to force a single drop into the ureter. I believe that the enormous hypertrophy of the bladder with marked thickening of the bladder musculature and the constant muscular tonus around the intramural ureter makes for a sort of sphincter action. This closes the ureter and we thus get the distention of the ureter and renal pelvis. As soon as you cut the bladder in the suprapubic cystotomy, relaxation of the bladder wall throughout is obtained and the constant or frequent vesical spasm is abolished. Then drainage of the kidney and ureter occurs. This is why I believe that suprapubic cystotomy is a good deal better than catheter drainage. I have been able to prove clinically that, where phenolsulphonephthalein excretion did not rise after several weeks of catheter drainage, it improved immediately after cystotomy. In suprapubic cystotomy the first stage is more dangerous than the second. In looking over my records of more than 300 cases my mortality for suprapubic cystotomy was a good deal higher than from enucleation of the prostate. My mortality after suprapubic prostatectomy is due to embolism or some other remote complications. Other than these I have had no deaths following the second stage, but I have had deaths within seventy-two hours three, four, five or six days after the first stage. I have no apprehension regarding the gravity of the second step any longer, for, if these patients get along well after the first operation, they are apt to go through the second. But I still fear the opening of the bladder in some of the cases in which it becomes imperative, even though this is done under local anesthesia, as is my custom.

DR. FRANCIS R. HAGNER, Washington, D. C.: Infection of the kidneys in these cases is of the utmost importance. I did not hear whether Dr. Bugbee mentioned the use of salt solution. I feel sure that we save more of these patients with salt solution or sal-glucose solution than by anything else we can use; not by beginning this when they are moribund, but as soon as they show symptoms of toxicity. I would rather see a patient with high temperature than with subnormal temperature as those with the subnormal temperature are the most critical type. A number of years ago I devised a bag for controlling hemorrhage and many of my friends said that it was an ingenious device but we did not need it because these patients do not bleed. Almost every man in this discussion has spoken of the danger of hemorrhage.

DR. VINCENT J. O'CONOR, Chicago: I followed the blood pressure very carefully in fifty-five successive cases two years ago. I found that it is not so much a question of the degree of systolic pressure as it is one of developing a stability of the blood pressure in relation to the renal function after primary drainage has been established. In other words, in many cases which have been drained by urethra or suprapubically the blood urea and phenolsulphonephthalein are normal but the blood pressure continues to go down, with a corresponding decrease in the pulse pressure. These patients, if operated on at this time, suffered a still more marked reduction in pulse pressure. Therefore, we adopted a routine of disregarding, to a certain degree, the time of return of renal function, except in relation to the blood pressure. If this remains stable for four or five days, then the patient can be operated on for removal of the obstruction and there will be practically no decrease in systolic pressure, regardless of a moderate amount of hemorrhage during the operation. If you watch the blood pressure carefully in conjunction with the renal function after primary drainage, it will not matter whether there is 200 mm. of mercury of systolic pressure so long as the blood pressure remains in the state of equilibrium, and you will have practically no drop in the systolic or pulse pressure at operation.

DR. HENRY G. BUGBEE, New York: I did not mean to infer that all patients are allowed out of bed the day following operation. Discretion must be used in this the same as in all other steps in this procedure. If a patient has had urethral drainage for a time and then had suprapubic drainage, the enucleation of the prostate entails very little shock, and these patients do better if allowed to be out of bed at once. In cases in which there has been drainage for only a short period of time, we keep the patients in bed longer. The question of embolism has bothered us considerably. One took place ten days after operation and the second three weeks afterward. Both patients had been out of bed for some time. Both were very stout men, weighing over 250 pounds, and both had a very high blood pressure. The question of suprapubic drainage is an important one. The best proof of the difference between catheter and suprapubic drainage is the way in which the patient acts. If catheter drainage is used, there is comparatively little shock if the bladder is emptied slowly. When a patient has been drained for two or three weeks by catheter, and suprapubic drainage is instituted, there is often a very severe reaction, which shows that the suprapubic is much more thorough than the urethral catheter drainage. The blood pressure is important. The maintenance of a level blood pressure by means of intravenous injections of glucose, as has been suggested, may prove of much value. Throughout my paper I tried to emphasize the importance of administering fluids to these patients at all times, from the day they first came under our care to the end of the treatment.

Malaria in Portuguese India.—The Portuguese maintain a bacteriology institute in the Nova Goa district on the west coast of southern India. Their possessions in India contain not much over half a million inhabitants. The bacteriologic institute publishes the *Arquivos Indo-Portugueses* in parallel Portuguese and French text. The first number of the fifth volume contains an exhaustive study of the mosquitoes of the region, with illustrations, and a study of the endemic malaria, the whole forming a profusely illustrated volume of nearly 200 pages. Dr. Froilano de Mello is professor in the Nova Goa medical school and director of the bacteriology institute.

THE TOXIN TREATMENT OF DERMATITIS VENENATA *

ALBERT STRICKLER, M.D.
PHILADELPHIA

This paper has for its aim the investigation of three problems:

1. What curative influence does the toxin of *Rhus toxicodendron* possess on the symptoms and course of dermatitis venenata due to poison ivy or oak?

2. Is it possible to desensitize individuals against dermatitis venenata produced by poison ivy, oak or sumac?

3. What is the probable duration, and what constitutes, the best method of obtaining desensitization?

A study of these problems appears important, not that dermatitis venenata caused by various plants constitutes a serious or fatal affection, but its rapid cure as well as its prevention in those who are highly susceptible would not only be a distinct economic gain, but would also enable many to enjoy the beauties of nature which otherwise would be prohibited.

The most recent authoritative work shows that the active principle of poison ivy or oak is a substance of glucosidal nature. This poison is nonvolatile even when mixed with acetic acid or alcohol.

In brief, the method of isolating this glucosidal substance consists in gathering the fresh leaves of poison ivy, for example, and extracting with absolute alcohol, filtering and precipitating. The precipitate is dried and extracted in Soxhlet extractors for ten hours. The extract obtained is dried at low temperature. The toxin is carefully weighed and dissolved in absolute alcohol, to which a certain amount of sterile water is added to make it nonirritating. By this method the poisonous principle of ivy or sumac used in these investigations was obtained.

In 1918 I advocated [1] the toxin treatment of dermatitis venenata due to poison ivy or oak as a method to be employed in very severe cases. An extended personal experience, as well as that of Petch at the Letterman General Hospital, San Francisco, and of H. E. Alderson of the Leland Stanford Junior University School of Medicine has convinced me that intramuscular injections of the toxin of *Rhus toxicodendron* should be employed in all cases of poison ivy of moderate and extreme severity. The almost magic rapidity with which the amelioration of the itching associated with this affection occurs, the rapid subsidence of the lesions, the uniformity with which good results are obtained, and the avoidance of uncomfortable moist applications recommended under the old method of treatment suggest that this method marks a distinct advance in the curability of dermatitis venenata due to *Rhus toxicodendron*.

Earlier in the investigations, an endermic test was advocated to determine whether the offending substance was the toxin of *Rhus toxicodendron* or *Rhus venenata*, before beginning treatment. Experience seems to point to the fact that, while the endermic test is of scientific interest, yet the treatment can be carried on without waiting for its results. The endermic test is performed by injecting 0.05 c.c. of each of the glucosidal vegetable toxic solutions ivy, sumac and also the diluent under the epidermis. A tentative opinion can be reached in twenty-four hours, but the final judgment requires forty-eight hours. A positive reaction is indicated by a papule, redness and tenderness at the site of injection.

Those toxins which show positive findings are the ones used in the treatment, and in the desensitization of patients with this affection. A study of the records of thirty patients on whom endermic tests were performed shows a distinct preponderance of the toxin of *Rhus toxicodendron* as the causitive agent. In a very few instances the toxin of the sumac was found to be responsible, and in some instances the toxins of both ivy and sumac proved to be the responsible factors.

At present it is my practice to question patients as to whether they were subjected to poison ivy or poison sumac or to both, and be guided in giving the first dose by the answer. When the patient is unable to furnish any information relative to the causative toxin, the first dose consists of both ivy toxin and sumac toxin in the proportion of two thirds of the former and one third of the latter.

The dose of the diluted toxin varies from 0.5 c.c. up to 1 c.c., although as high as 2 c.c. can be given. The injection is given intramuscularly either in the outside of the arm or in the buttock. These injections can be given every twenty-four hours. Usually two injections are all that is needed, but at times three or even four injections have to be given. As a rule the itching is relieved within twenty-four hours after the first injection. I have treated thirty patients by this method without a failure in any instance, and in no case was any local application of any kind used.

REPORT OF CASES

CASE 1.—Miss McD. had dermatitis venenata for eighteen days, developing into an eczema. The endermic test was positive for ivy. Rhus toxin, 0.3 c.c., was given intramuscularly. Two days later she received 0.5 c.c. of rhus toxin, and was discharged cured two days after the last injection.

CASE 2.—L. B. had dermatitis venenata of ten days' duration, which involved the hands, ear and legs. The endermic test was positive for rhus toxin. The patient was given 0.5 c.c. of rhus toxin intramuscularly. The itching subsided and the lesions dried up. No local treatment was given. The patient was discharged, cured.

CASE 3.—H. L. had had dermatitis venenata of two days' duration involving the neck, chest, fingers, arms, lips and genitalia; the attacks were recurrent. The endermic test was positive for sumac. The patient was given sumac toxin, 0.3 c.c., intramuscularly. On the next visit, which was three days after the first, the patient stated that all the swelling was gone, there was no more itching, and the eruption had dried up. He received no local treatment.

CASE 4.—Miss P. suffered from dermatitis on the right leg, which developed one week after the patient was in this country. It was pronounced dermatitis venenata and she was given directions for local applications by two physicians. When she consulted me, her leg was red and the skin itchy. The endermic test was positive for sumac. She was given 0.5 c.c. of sumac toxin, intramuscularly. Two days later, the eruption was paler and more scaly and the itching had subsided. She was given 0.7 c.c., and on the occasion of her next visit, which was two days later, the condition had become normal. No local treatment was prescribed.

CASE 5.—S. L. (referred by Dr. Finck) had dermatitis venenata involving the arms, chest and thighs. Itching was

* Read before the Section on Dermatology and Syphilology at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

1. Strickler, Albert: J. Cutan. Dis. 36: 327 (June) 1918.

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very marked. The lesions were still present. The patient had had local applications which influenced the lesions slightly, but not the itching. This attack was contracted when the patient passed a wooded area containing poison plants. The endermic test was positive for ivy and weakly positive for sumac. The patient was given ivy toxin, 0.4 c.c., and sumac toxin, 0.3 c.c. The next day the itching was gone and the lesions were drying up. In three days after the first visit the patient was well. At my request the patient continued to walk through the same woods, and remained free of any attacks of dermatitis venenata all summer.

CASE 6.—M. McC. had dermatitis venenata of twenty-four hours' duration involving face, forearm and neck. The face was markedly swollen and the eye closed. The endermic reaction was positive for ivy. He was given 0.5 c.c. of rhus toxin and no local treatment. The next day, the swelling markedly improved and the itching was almost gone. In two days after the injection he was cured and discharged.

CASE 7.—D. S. had dermatitis venenata involving the entire body; the face was markedly swollen; the eyes were closed; there was marked itching. The endermic test was positive for sumac. He was given 0.5 c.c. of sumac toxin, intramuscularly, but no local treatment; on the next day the swelling of the face and eyes was gone; lesions were still present on the arms. The following day he was given 0.5 c.c. of sumac toxin. The vesicles and redness were still present on the arms. Owing to some crusting, phenolated petrolatum was prescribed. Four days after the first injection, the patient presented absence of swelling, no lesions and no itching, but a few crusts were still present on the arms.

CASE 8.—A. A. had dermatitis venenata of three days' duration affecting the right hand, which was swollen and studded with vesicles. The endermic test was positive for sumac. The patient was given 1 c.c. of sumac toxin. The next day the swelling and the vesiculation were lessened. The improvement continued and in four days after the injection he was discharged cured. He received no local treatment.

CASE 9.—B. K. had dermatitis venenata of two days' duration involving the face, arms, ears, legs and genitalia. The endermic test was positive for rhus toxin. He was given 0.7 c.c. of rhus toxin, intramuscularly, which was followed by great improvement. On the next day he was given 0.5 c.c. of rhus toxin, and when he reported the following day, the swelling and itching were gone. Vesicles were drying and erythema was still slightly present. The patient received no local treatment.

CASE 10.—A. D. L., had had dermatitis venenata from four to five weeks involving the hands and legs, which were red and presented vesicles having a linear arrangement. Subjectively there was considerable itching. The condition had recurred yearly for three or four years. The endermic test was positive for ivy toxin. The patient was given 0.7 c.c. of rhus toxin, and the next day the itching and redness were entirely gone and the patches became scaly. Two days following the first injection he was given 0.5 c.c. of rhus toxin. There was no local treatment. Four days after the first injection, the patient played golf among poisonous weeds and had no recurrence, although on every previous occasion, when playing in that particular field, he had developed a dermatitis venenata. On occasion of this visit he was given 0.5 c.c. of rhus toxin intramuscularly, and 0.5 c.c. on the next day also. My reason for administering the last two doses was to get an idea as to how many treatments were necessary to desensitize this patient and how long this desensitization would last. For one month he was free from dermatitis venenata, although frequently exposed in such a manner as to favor an attack; but at the expiration of the month, he developed another attack of dermatitis venenata.

CASE 11.—T. A. U. had had dermatitis venenata on the hands and arms for two days. The endermic test was strongly positive for sumac and weakly positive for rhus. He was given sumac, 0.5 c.c., and rhus toxin, 0.4 c.c. The next day the itching was gone and he was given sumac toxin, 0.5 c.c. Four days after the first injection all lesions had disappeared. He was given two more injections, and although he exposed himself again, he had remained free from an attack of dermatitis venenata. No local treatment was prescribed.

CASE 12.—W. L. (referred by Dr. Meyer Solis-Cohen) had had generalized dermatitis venenata, of two days' duration, contracted while picking ivy leaves. He had had three previous attacks. There was marked swelling and vesiculation and itching. Local remedies were applied for two days without any improvement either in the subjective symptoms or the objective phenomena. He was given 0.6 c.c. of rhus toxin intramuscularly. The next day the swelling was reduced considerably and the itching was much less. There was no local treatment. He was given 0.7 c.c. intramuscularly; on the following day 0.8 c.c. was given intramuscularly. By this time the patient was convalescent, and this was only on the third day following the first injection. Five days after the first visit the patient was absolutely normal.

CASE 13.—J. F., a boy, aged 10 years, suffered repeated attacks of ivy poison which lasted from eight to fifteen days. The last attack was well advanced when the patient received his first intramuscular injection of rhus toxin, dose 1 c.c.; within twenty-four hours the second dose, 1 c.c. of rhus toxin, was administered. The symptoms were not only checked, but had entirely disappeared on the next day.

CASE 14.—R. K., aged 7 years, had had generalized dermatitis venenata for five days, involving the arms, legs and face. The condition was associated with extreme itching. Endermic test: ivy, 3; sumac, 1; control, negative. Ivy toxin, 0.3 c.c., and sumac, 0.1 c.c., were given intramuscularly; next day, ivy toxin, 0.3 c.c.; sumac toxin, 0.1 c.c., intramuscularly. On the following day the patient was well.

CASE 15.—S. R., aged 17, had dermatitis venenata for one week. The hands were markedly involved. Endermic test: ivy toxin, 3; sumac toxin, 2; control, negative. July 1, 1920, rhus toxin, 0.3 c.c., sumac toxin, 0.2 c.c. were given intramuscularly; July 3, ivy toxin, 0.2 c.c.; sumac toxin, 0.1 c.c. July 4, the patient was well.

CASE 16.—J. C., a man, aged 22, was subject to dermatatitis venenata; he had attacks almost yearly, the last attack occurring several years ago. The average duration of the attacks was from three to four weeks. The present attack began while he was visiting a cemetery where he was cutting some weeds. This occurred, May 28, 1921. In the evening of that day the patient noticed some itching of his hands. This was soon followed by marked swelling of the hands and arms, associated with intense itching and with the development of vesicles and blebs. The patient presented himself, May 31, on which day he received 0.1 c.c. of ivy toxin. On the following day the intense itching had subsided, but no difference could be seen in the lesions. On that day he received his second injection, of 0.1 c.c. of ivy toxin. June 2, the lesions were beginning to dry, and on that day he received the third dose, of 0.1 c.c. of ivy toxin. June 3, the patient received the fourth dose, of 0.15 c.c. of ivy toxin. June 4, the lesions were practically all dry and the epidermis was beginning to exfoliate. During the course of this treatment the patient received no local application whatsoever.

COMMENT

Petch treated more than fifty cases of dermatitis venenata due to poison oak. Alderson writes: "Captain Petch has used the poison oak toxin in over fifty cases. None of these failed to show improvement after the first injection. One case required three doses (0.5 c.c.) at twenty-four hour intervals. Four required two injections. There were no failures, and in all cases recovery occurred in a few days."

Alderson[2] says:

The poison oak cases constituted only the more severe examples, the ordinary cases being taken care of by the ward surgeons. In this condition we had great success with intramuscular injections of an alcoholic extract of the poison plant as described in an article by Strickler.[1] Dr. Strickler very kindly sent us a sample of his preparation, but some of it was lost, and the rest soon used up, so we asked George Brommel . . . to prepare some, which he did. In over thirty acute cases, many of them quite severe, one or two

2. Alderson, H. E.: Notes on Skin Diseases Observed at the Letterman General Hospital, California State J. Med. 18: 353 (Oct.) 1920.

intragluteal injections (1 to 2 c.c.) of this solution caused rapid amelioration of the local distress within twenty-four hours, and in a day or so the dermatitis subsided markedly. Practically all cases cleared up within a week. Naturally where the skin reaction had been severe, return of the skin to normal was slower, but in these cases the specific oak dermatitis itself was promptly relieved after the injection. From our experience we feel that Dr. Strickler has made a valuable contribution to the therapy of dermatitis venenata.

Schamberg [3] advocates the mouth treatment of dermatitis venenata caused by poison ivy. The formula he suggested consists of: tincture of rhus toxicodendron, 1 c.c.; rectified spirit, 5 c.c.; syrup of orange, sufficient to make 100 c.c. He advocates taking a dose three times a day after meals. Starting with 2 drops after breakfast, 4 drops after lunch, and 6 drops after dinner, then increasing 2 drops with each dose until 18 drops are taken; then he directs that one teaspoonful once a day be given diluted in water. It appears logical in the cases of dermatitis venenata due to the ivy toxin that the addition of the mouth medication to the intramuscular treatment should be an advantage. Though I have had no practical experience with the combined method, it would appear logical to recommend giving a patient with dermatitis venenata due to *Rhus toxicodendron* three intramuscular injections of ivy toxin at twenty-four hour intervals, at the same time giving the tincture of rhus toxicodendron by mouth, according to the method suggested by Schamberg.

By this manner we would not only alleviate the distress and suffering quickly, but would also make a distinct advance in establishing a desensitization for the patient which would probably last for the rest of the summer.

There is considerable testimony pointing to the probability of establishing a desensitization to poison ivy and poison sumac by the injections of the glucosids of these plants. Dakin [4] records an observation of laborers chewing the leaves of poison ivy and so securing desensitization. The late Wendell Reber related to me that he secured desensitization from poison ivy by chewing the leaves of *Rhus toxicodendron;* this he did daily during his stay in the Adirondack Mountains, during the summer months. Eye witnesses have told that Indians and other residents of New Mexico habitually eat the leaves of ivy each spring so as to avoid poisoning during the summer.

The question as to whether any method of treatment confers desensitization is one that is at all times difficult to answer, and particularly is this true of ivy poisoning. From my experience I may state that it is possible to confer desensitization by the injection method of ivy toxin. A very striking example came under my observation last summer:

Mrs. H. T. F. had been subject to dermatitis venenata every summer of such severity that she was confined to bed for a period of four to six weeks. During last summer she was given five intramuscular injections of rhus toxin dose, 0.5 c.c. every third day. After this course of treatment and subsequently she went out in the woods and even picked the ivy leaves without suffering any ill effects.

In this connection I quote from an unpublished communication of H. E. Alderson, by courtesy of the author:

A young woman had acute dermatitis on her face and extremities of two days' standing caused by exposure to poison oak. The usual dose of 1 c.c. was injected intragluteally. Next day her condition was somewhat improved. She was then given another injection (1 c.c.). Within three days after the first dose all her lesions had subsided to a great extent, and within two more days she was practically well. Locally a zinc oxid starch lotion was used.

To test her "immunity" two months later, she deliberately rubbed some poison oak leaves into her skin. The results were most favorable. No dermatitis venenata resulted. Always previous to this experience she was very susceptible to the effects of poison oak. This test seems to prove that immunity has developed.

Particularly in reference to desensitization it appears logical that the combined method, one in which the intramuscular and the mouth treatments are used, present an ideal method for obtaining desensitization.

It is my impression that in all probability the desensitization obtained from poison ivy or poison sumac is a tissue immunity and one that has to be frequently renewed. That it is possible to produce desensitization to poison ivy seems to be also the impression of both Schamberg and Alderson.

It is apparent that the determination of the question of obtaining desensitization to poison ivy must rest upon a larger experience; however, all facts point strongly to the belief that such desensitization can and has been obtained.

My interest in this problem was aroused by the results achieved by Dr. Jay F. Schamberg in desensitizing patients by the internal administration of minute and ascending doses of *Rhus toxicodendron,* to which more detailed attention has been given.

CONCLUSIONS

As a result of my experience, and also that of Alderson and Petch, it can be concluded that:

1. The intramuscular injection of the toxin of *Rhus toxicodendron* or the toxin of *Rhus venenata* can cure the dermatitis produced by poison ivy, oak or sumac.

2. As a rule, the subjective symptoms associated with this affection either disappear or are greatly modified within twenty-four hours after the first injection is given.

3. No more than four injections are necessary to produce a cure, but that number of treatments are seldom necessary, two injections as a rule being sufficient.

4. These injections are best given intramuscularly at twenty-four hour intervals.

5. The results of our series were obtained by the use of the intramuscular injections alone, and without the use of any local applications whatsoever.

6. It appears highly probable, in view of the results obtained by various observers, that it is possible to establish a desensitization to ivy poison or oak poison. The desensitization is probably temporary in character, and one that has to be renewed from time to time.

7. In the treatment conducted for the purpose of obtaining desensitization, the use of the combined intramuscular and mouth method offers the most logical procedure, and the one best calculated for obtaining a most satisfactory result.

1408 Spruce Street.

3. Schamberg, J. F.: Desensitization of Persons Against Ivy Poison, J. A. M. A. 73: 1213 (Oct. 18) 1919.
4. Dakin: Am. J. M. Sc., 1829.

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ABSTRACT OF DISCUSSION

DR. EVERETT S. LAIN, Oklahoma City: The treatment of *Rhus toxicodendron* eruption by immunizing the patient is not only rational but it will eventually prove to be the best treatment for this most distressing disease in susceptible individuals. I was interested to hear that perhaps certain races are immune or may acquire immunity. I have not seen a case of *Rhus toxicodendron* poisoning in the true African. I have for several years attempted to make some special study of skin eruptions among American Indians and twice have been associated with several thousand of them where they were camped for several days at a time. In this camp they were building their lodge for their old-fashioned sun dance. They brought green brush and trees out of the timber and assembled them for their lodge and individual residing places. I saw on a number of these lodges the *Rhus toxicodendron* vine. They handled it with their bare hands, cutting these vines with pocket knives, and were in constant contact with it, though to this day I have never observed a single case of *Rhus toxicodendron* poisoning in the full-blood Indian. They surely possess some inherent or natural immunity. If so, will not some method of repeated or gradual inoculations bring about an acquired immunity?

DR. WILLIAM ALLEN PUSEY, Chicago: This treatment of *Rhus toxicodendron* poisoning by producing immunity has always met with some doubt in my mind, for the reason that if there is such an immunity it is very slight; patients who are susceptible to this poison get one attack after another. So, *a priori*, I have been reluctant to accept the findings. At the present time McNair is publishing a very exhaustive study of rhus poisonings in the *Archives of Dermatology and Syphilology*, and his conclusions are that any immunity to rhus poisoning, any artificial or acquired immunity, is very doubtful. In the context it is evident that his work was largely done around San Francisco, at one of the universities. As long as experience is fallacious and judgment so difficult, I still reserve the privilege of being skeptical about the value of immunizing treatment of *Rhus toxicodendron* poisoning.

DR. HENRY H. HAZEN, Washington, D. C.: I have seen a large number of pure blooded negroes who have suffered from this disease very severely. I think it is not unusual for a patient to come in with ivy poisoning and get well within a week and have another attack. I had one patient come in with a very severe ivy poisoning who was almost cleaned up when I left home, and yesterday I had a letter from my associate saying that he had just returned with another attack. It seems to me that if it could recur so soon after a first infection, it is rather doubtful if we can immunize very effectively.

DR. ALBERT STRICKLER, Philadelphia: As I stated in my paper, the question of desensitization must not be confused with that of immunity. The whole problem of desensitization is not yet understood. It is in its infancy; but I feel that by this method we can arrive at a conclusion as to whether it is possible to desensitize these patients. No one man's experience is sufficient to say positively whether this can be done or not. If the method is used in various parts of the country it will mean much more. This method has accomplished more than any form of local treatment that I have ever seen in the treatment of severe cases of dermatitis venenata.

Nervous Communication Between Genito-Urinary and Digestive Organs.—A ganglion which they claim serves as a center of nervous influence for both the genito-urinary organs and the terminal nerves of the digestive tract has been discovered by S. Gil Vernet and F. Gallart Monés at the emerging point of the inferior mesenteric artery. They describe it with ten illustrations in the *Revista Española de Medicina y Cirugía*, **3**:117, 1920. They theorize that this ganglion may be the center for the bladder-kidney, kidney-intestine, and other reflexes in this region. This ganglion seems to correspond in man to the inferior mesenteric ganglion in animals.

END-RESULTS OF RECONSTRUCTION OPERATION FOR UNUNITED FRACTURE OF NECK OF FEMUR*

ARMITAGE WHITMAN, M.D.
NEW YORK

Before presenting the details of a new operation, one should be careful to explain the conditions responsible for its development, the class of cases to which one believes it adapted, and the postoperative results that may reasonably be expected, as determining its success or failure.

One of the most crippling injuries from which a patient may suffer is an ununited fracture of the neck of the femur. It is crippling not only in that it limits or does away with the individual's locomotive ability, but also that in addition it frequently insures them a life of constant pain.

Since fracture of the neck of the femur was first recognized, surgeons have been perplexed by the problem of the pseudarthrosis so frequently following it. In spite of the development of the abduction method of treatment, we may assume that a certain proportion of transcervical fractures, and fractures by decapitation, will not unite. In determining this proportion we may range between the reports of Campbell,[1] who

Fig. 1. Fig. 2. Fig. 3.

Fig. 1.—Area of the neck that is usually "absorbed" in ununited fractures of long standing.

Fig. 2.—Relation of the fragments in the ordinary type of ununited fracture: the shaft of the femur is displaced upward and adducted.

Fig. 3.—Disadvantages of implanting the trochanter in the acetabulum after removal of the head: poor adjustment, insecurity and loss of motion.

obtained union in 85 per cent. of this type of fracture, and Delbet,[2] who states that such fractures never unite under any form of treatment. We may also assume that for years to come many such cases will receive no treatment, or improper treatment, and that the unfortunate results will continue. Under the circumstances, there is for some time no likelihood of a dearth of pseudarthroses following this fracture.

The remedies hitherto at command consist in operations primarily designed to obtain union by assuring close coaptation of the fragments by artificial means. Those of longest standing are the simple nailing operation with an ordinary wire nail, the use of a tibial graft (Albee) or a fibular graft (Campbell-Delbet). These are supposed to hold together the ununited fragments. The advocates of the bone graft believe that it has distinct osteogenic powers. Delbet claims further that it enables the patient to bear weight anywhere

* Read before the Section on Orthopedic Surgery at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

1. Campbell, W. C.: Ann. Surg. **70**: 600 (Nov.) 1919.
2. Delbet, cited by Basset: Les fractures du col du fémur, Paris, Felix Alcan.

from ten to thirty days after operation. This point is doubtful, however, as his patients are described as getting about on the "appareil de marche à extension continue," which appears to be a modification of the ordinary caliper hip splint with traction, in which case, of course, no weight is borne upon the limb.

The type of operation varies from simple splinting through a small incision over the trochanter (Delbet) to arthrotomy through an anterior incision with exposure and freshening of the fragments, followed

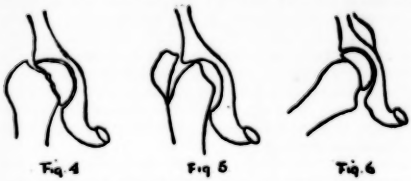

Fig. 4 Fig 5 Fig. 6

Fig. 4.—Fragments apposed for direct repair, illustrating contact of the trochanter with the rim of the acetabulum checking abduction and causing disability, even when union is obtained.

Fig. 5.—Trochanter displaced outward to permit inclusion of the neck in the acetabulum (Albee), illustrating the limited area of support, the limitation of abduction, and loss of muscular control.

Fig. 6.—Brackett's operation (from roentgenogram three months after operation, showing solid union between trochanter and head); the angle of abduction is about 40 degrees.

by introduction of the bone peg through a second incision over the trochanter (Albee). This appears a much more rational procedure, as one often finds the fractured surfaces so covered with fibrous tissue as to make their union, following simple approximation by any means, seem doubtful.

The objection to these operations, aside from their technical difficulties, lies in the fact that they depend for success on ultimate bony union—in other words, on the reparative powers of the patient himself. Enthusiastic as some advocates of the autogenous bone graft may be, and brilliant as may be their results, they could hardly deny that their operative efforts depended for success on the secondary reparative capacities of the individual. To put the case as generously as possible, there must always be a proportion of cases in which there will be failure of bony union, and in which the patient will have submitted to operation and probably six months of non weight-bearing to no end.

Aside from this consideration, one will encounter the large and more important class of cases in which the neck has been completely absorbed (Fig. 2). If the upper portion of the shaft and the head be brought together and unite, we have then obtained union at the expense of function, for it is obvious that from a neckless femur not much function, other than weight bearing, can be expected (Fig. 4). In some cases, indeed, it may prove impossible to bring the fragments together at all. In others, the head will be so hollowed and atrophied that it is little more than a shell, hardly strong enough to be relied on to provide a cartilaginous covering for the end of the graft. It is the view at the Mayo Clinic,[3] that operation should not be done in these cases.

In fact, the statistics cited by reliable operators are not encouraging. Henderson [3] had 38 per cent. good results in a series of twenty-six selected cases, which represented 8.3 per cent. improvement of the 120 cases of pseudarthrosis in which relief was sought. Brackett [4] found at the Massachusetts General Hospital one patient with a useful leg out of a series of twenty-four operated on—4 per cent. Delbet [2] had 52 per cent. good results, using exclusively the fibular bone graft. Speed [5] is inclined to advocate excision, and more and more doubts the value of the bone transplant.

Dr. Brackett has devised an operation in which the denuded trochanter is placed in apposition to the denuded head, in cases in which the neck has been completely absorbed (Fig. 6). This also depends for success on ultimate bony union between the trochanter and the head. Brackett [4] states that the method "treats the head as if it were a real sequestrum." There would also appear, from the diagrams accompanying the article, to be decided mechanical obstacles to success, as it would seem that reduction of abduction and placing the limb in a line with the body would be likely in course of time to cause a dislocation (Fig. 7). Leaving all such factors out of consideration, however, it is still clear that even this operation depends in the ultimate analysis on the reparative power of the patient.

We may therefore definitely state that Dr. Whitman developed the reconstruction operation first as applicable to the cases in which the neck has been completely absorbed, and in which bony union offers no solution to the subsequent problem of function; and second, in an effort to escape the percentage of hazard involved in operations trusting at all to the patient's ability to repair. Before this audience I need hardly observe that as a class these patients are not noted for their osteogenic powers.

The reconstruction operation removes the head of the bone. The trochanter is chiseled off in a line continuous with the remaining portion of the neck, with the aim of providing a broad, flat bearing surface. The surviving portion of the neck is thrust within the acetabulum to act as a new head, while the bone bared by removal of the trochanter forms, as it were, a new

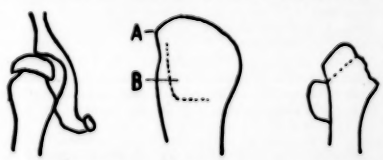

Fig. 7. Fig. 8. Fig. 9.

Fig. 7.—Brackett's operation: The limb has been brought into line with the body, suggesting insecurity, liability to subluxation and impairment of function.

Fig. 8.—Line of incision for reconstruction operation: *A*, anterior superior spine; *B*, trochanter.

Fig. 9.—Line of section of the trochanter and the point on the shaft to which it is to be transferred.

neck. All operations hitherto devised have disregarded the importance of the trochanter and the muscles atttached to it. In this operation it is displaced downward upon the shaft of the femur as far as its muscular attachments will permit, and there secured. The muscles thus put on the stretch act as a sling to hold the end of the femur within the acetabulum, and

3. Henderson: Ununited Fractures of the Hip, Surg., Gynec. & Obst. 30: 145 (Feb.) 1920.

4. Brackett, E. G.: Boston M. & S. J. 177: 351 (Sept. 13) 1917.

5. Speed, Kellogg: Arch. Surg. 2: 45 (Jan.) 1921.

later, when the patient gets about, resume their normal functions of abduction and rotation—functions which are by no means lightly to be dispensed with (Fig. 12).

What, then, are the considerations influencing us to perform the operation?

The patient presents himself as seeking primarily the relief of pain. Once his pain was relieved he would be glad of a stable, weight-bearing extremity, such as might be assured by ankylosis. These two results obtained, he would be further gratified by the

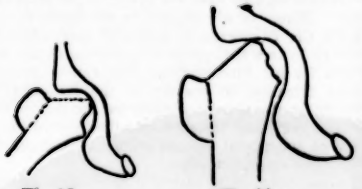

Fig. 10.—The reconstructed neck.
Fig. 11.—Relation of the reconstructed neck with the acetabulum in locomotion, and the leverage assured for the abductors. Contrast with Figures 3 and 4.

possession of sufficient motion to permit of his sitting down with comfort, and of going up and down stairs.

The symptoms we seek to relieve, therefore, are briefly: (1) pain; (2) disability. In estimating success or failure, we shall judge by (1) relief of pain; (2) a stable, weight-bearing extremity, and (3) ability to sit down and ascend or descend stairs.

The operation consists in a half U incision, beginning at the iliac crest about 1¼ inches posterior to the anterior superior spine, extending downward to about an inch anterior to, and below, the base of the trochanter, and then extending horizontally backward across, below it (Fig. 8). The fibers of the gluteus medius and of the tensor fasciae femoris muscles are separated by blunt dissection, and the capsule is exposed. The capsule is opened in the direction of its fibers. The head of the bone is then removed. Following the upper border of the gluteus minimus muscle, the base of the trochanter is reached and the trochanter with its attached muscles is chiseled off from the shaft in a direction outward, downward and slightly backward, so that the bone surface left by its removal corresponds with the inclination of the surviving portion of the neck (Fig. 9). The outer surface of the shaft of the femur is then exposed, and with the limb in sufficient abduction to insure the firm engagement of the neck within the acetabulum, the trochanter is pulled downward on the shaft as far as its muscular attachments will permit. At this point, with a wide chisel, a sufficient portion of the cortex is removed from the outer surface of the shaft to make a bed for its reception. It is then secured in place with kangaroo tendon, nail, graft or peg (Fig. 10). The wound is closed in layers and a dressing applied. A long spica, extending from the axillae to the toes, is then applied, holding the limb in the necessary amount of abduction, full extension, and midway between internal and external rotation.

The plaster is left on for about six weeks. It is then removed, and the patient, lying in bed is encouraged to have active and passive motions of the limb. When a fair degree of voluntary control has been established, the patient may get up. The treatment from that time on depends upon the disposition—adventurous or otherwise—of the individual. If otherwise, a short spica is applied, and the patient is encouraged to bear weight upon the limb. The short spica is removed when the degree of the patient's confidence appears to warrant it. From that time on the rapidity of the improvement is directly commensurate with the effort of the patient.

It is perhaps unnecessary to say, in speaking of the class of cases for which this operation is designed, that giving the patient a painless, stable, weight-bearing hip joint, provided with motion enough to permit going upstairs and sitting down, is not equivalent to making him able to walk. He has to overcome the effects of months of disuse, of months of constant pain, of dread that any attempt to bear weight will result in collapse and still further pain. In short, many of these patients have actually forgotten how to walk, and the process of their reeducation is as difficult as if they had never known how. It is even more so, because walking having once been a practically automatic act, they are discouraged at the amount of attention necessary to relearn it. If there ever was a class of case to which the phrase muscular reeducation was properly applicable, this class is it. Paradoxical as it may seem, the very success of the operation is sometimes a drawback, as patients who have been sitting in pain for months or years are sometimes quite content to sit in comfort for the rest of their lives.

I have described the operation simply with reference to the one class of case for which it was originally designed—ununited fractures of the hip. Without wishing to seem hyperenthusiastic, it may be suggested that its use will eventually become expanded to a variety of other conditions, as its results are certainly equal to, if not better than, most arthroplasties. The amount of shortening, an inch to an inch and a half, is negligible, as compared with the superior freedom of motion and muscular control.

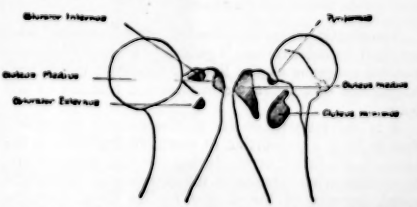

Fig. 12.—Attachment of muscles to greater trochanter (after Spalteholz).

I do not advocate the indiscriminate application of this operation to all types of disabilities of the hip joint. The operation is difficult and severe, although so far there has been but one death in Dr. Whitman's series, occurring suddenly on the tenth day, and probably due to embolism. Nevertheless, it should never be lightly undertaken, and never except by skilled operators. Furthermore, a good operation is but half the battle, as the retention apparatus, to be effective, must be comfortable, and permit of the pateint's being turned in bed and moved about. The usual precautions against hypostatic congestion, bed sores, etc., must be religiously observed.

The first operation was performed, Oct. 10, 1916, on a woman, aged 60. It has since been performed on nine other patients—eight women and one man. In this series there has been one death, curiously enough occurring in the youngest patient of the series, on the tenth day, probably from embolism.

Space will not permit a history of each case. The first patient is walking with a barely perceptible limp, can go up and down stairs in the normal fashion, and has been at work—dressmaking—since six months after operation. A man with severe locomotor ataxia, totally incapacitated as a result of a fractured hip, is now getting about on crutches, and regards the operated limb as the most dependable one, in spite of having sustained a supracondylar fracture of the same femur since the operation. A woman with severe general rheumatoid arthritis regards the operated hip as the better of her two. All the patients have been relieved of pain. All are able to bear weight upon the affected limb. The amount of function varies directly according to the energy and persistence of the patient.

To sum up, I may say that those on the staff of the Hospital for the Ruptured and Crippled who have observed the progress of these cases are satisfied that to the patient desiring relief from the disabilities incumbent upon ununited fracture of the hip, the reconstruction operation offers relief of pain and a weight-bearing extremity. Given an energetic and persistent subject, ultimate function may become at least as good as what is generally regarded as a satisfactory result following union of the original fracture.

TREATMENT OF UNUNITED FRACTURES OF THE NECK OF THE FEMUR BY BONE TRANSPLANTS*

CHARLES DAVISON, A.M., M.D.
Head of Department of Surgery, University of Illinois College of Medicine
CHICAGO

Autoplastic transplantation of bone, combined with external immobilization, is generally accepted by experienced surgeons as the line of treatment most likely to produce osseous repair in ununited fracture of any bone.

It is unfortunate, so far as treatment is concerned, that so large a proportion of ununited fractures of the neck of the femur occur during the late years of life, at a time when operative interference is contraindicated, because of the danger to life from operative shock, prolonged immobilization and decubitus.

If the patient is a wage earner by his physical efforts, in good general health, in the productive time of life, it is a surgical problem for those responsible for his treatment to restore his self-sustaining ability and working capacity as an industrial unit at the earliest time consistent with safety to life.

Transplantation of bone is the indicated treatment for this type of patients.

The rigid adherence to the technical details which make bone-grafting successful, and to a definite plan of operation for the repair of this special ununited fracture, is necessary to obtain favorable results.

* Read before the Section on Orthopedic Surgery at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

A segment of the fibula is best utilized for the transplant. It combines an ideal size and shape, together with the strength, elasticity and lightness of a tube. After the periosteum is removed, it presents a continuous, irregular surface of cortical bone covered by the cambrium layer, which is rich in growing bone cells, available for grafting and osteogenesis. The transplant is obtained from the same extremity unless there is definite osteoporosis.

The ununited fracture is exposed through an anterior incision directly over the defect in the neck of the femur. Removal of fibrous tissue from the area between the fragments is indicated only when it is necessary to free the capital fragment to obtain better position for it. Fibrous tissue that can be preserved without detriment to position of the fragments will undoubtedly act as a framework for the deposition of new bone cells, and hasten rather than retard the formation of substantial osseous union between the fragments after transplantation.

It is not practical to maintain mechanical extension of the extremity while the transplant is being inserted. The neck of the femur has already been partially destroyed and absorbed by the process of grinding

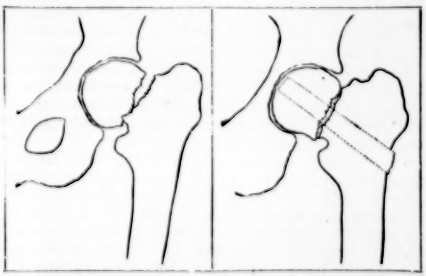

Fig. 1.—Roentgenogram tracing of an ununited fracture of the neck of the femur.

Fig. 2.—Roentgenogram tracing of an ununited fracture of the neck of the femur, showing the effect of abduction and showing the plan of bone transplantation.

together of the fragments by muscular action, and the extremity is permanently shortened in proportion to this destruction of bone. The muscles of the thigh are contracted to correspond to the bone defect.

If the transplant were inserted during mechanical extension, it would immediately be put under cross-breaking strain, equivalent to the amount of mechanical extension as soon as the extremity was released from traction. Under such a strain the transplant will either break at the fracture or cut through one of the fragments until the tension is relieved.

The transplant should be inserted while the thigh is in complete abduction, as that position, without traction, increases the length of the extremity, by changing the angulation of the fragments (Figs. 1 and 2).

For the introduction of the transplant, a second incision is made along the outer aspect of the thigh, exposing the shaft of the femur immediately below the greater trochanter, where an opening through the cortical bone of the outer part of the shaft is made accurately fitting the irregularities of the large end of the transplant. With the capital fragment held in proper position, a canal, smaller than the transplant, is

cut through to the articular cartilage of the head of the femur. The transplant is driven into this canal, across the line of fracture, until the end rests against the under surface of the cartilage of the capital fragment (Fig. 2).

To obtain union between the transplant and the fragments, it is imperative that all motion between them be prevented. Intermittent muscular spasm of the muscles attached to the trochanters, acting on the transplant, will cause it to break or to cut its way through one of the fragments to relieve the strain. Complete abduction of the thigh will cause the muscles attached to the lesser trochanter to pull the fragments solidly together in the long axis of the transplant, preventing any strain on the transplant.

Complete external rotation of the thigh will relax the muscles attached to the greater trochanter and prevent any cross-strain on the transplant.

External immobilization of the area of the transplantation is best accomplished by a plaster cast extending from the axilla to the toes, in the position of complete abduction and complete external rotation of the thigh. The opposite thigh is included to prevent shifting of the pelvis within the cast. The immobilization should be continued without change during convalescence, until roentgenograms show substantial osseous union between the fragments.

The transplant under favorable conditions grafts to the cortical bone of the lower fragment in a manner similar to the healing of wounds by primary intention.

In the live cancellous bone of the lower fragment, the process is different. It stimulates the healing of wounds by granulation. Under the stimulation of the transplantation, new bone cells are developed from the cambrium layer of the transplant and from the cancellous bone of the host, both of them rich in osteoblasts, until the transplant is embedded in a solid mass of new bone.

In the partly devitalized cancellous tissue of the capital fragment, the process is much slower. The transplant furnishes the osteoblasts, while the surrounding cancellous bone acts as a scaffold into which the osteoblasts penetrate and develop, forming new bone which replaces the old cancellous bone as it is absorbed.

The medullary canal of the transplant is closed at each end by a thin plug of new bone, apparently produced from the endosteum. The development of new bone from all sources fills in the defect between the fragments of the ununited fracture, and produces a substantial external callus especially thick and strong at the upper part between the neck and the greater trochanter (Fig. 3).

At the time of maximum development of new bone, the upper end of the femur between the cortical bone and the transplant is filled by a dense inelastic mass of new bone without cancellous demarcation. As time goes on, measured in years, both the transplant and the new bone are absorbed and modified toward cancellous bone until there is physiologic compensation between elasticity, strength and function. After removal of the plaster, even with solid repair of the ununited fracture, substantiated by stereoscopic roentgenograms, full body-weight bearing should not be allowed until the functional movements of the hip and knee joints have been well restored by systematic massage and passive exercises.

Fig. 3.—Diagrammatic vertical section of transplantation of fibula for ununited fracture of the neck of the femur, based on roentgenogram studies, one postmortem examination, and animal experimentations, showing the areas of new bone infiltration and location of callus.

The length of the neck of the femur has been largely destroyed before the patient comes to operation for nonunion, and it is not reproduced by transplantation; consequently, after repair of the ununited fracture the extremity is correspondingly short. The movements of the hip-joint which depend on the length of the neck of the femur for normal completion, as abduction of the thigh, are correspondingly limited.

CONCLUSIONS

1. Transplantation of a segment of fibula is an effective method of treatment for ununited fracture of the neck of the femur when the patient is physically able to assume the burden of the operative procedure and the subsequent confinement.

2. It is especially applicable in young and middle-aged subjects who belong to the wage-earning class.

3. It is contraindicated in old people, because of the shock of the operation and the prolonged immobilization.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. WHITMAN AND DAVISON

DR. E. G. BRACKETT, Boston: With a damaged joint the problem is to bring this joint back to its best possible working condition. There are cases in which no operative measures should be attempted, either because of the good functional result, or because of contraindications due to age or general condition. In the older individuals, when there is still a good head, good articular lines, nearly normal cartilage surfaces, and a joint free from osteoarthritic changes, it would seem most reasonable, with the essential structures of the joint in such good condition, to use them with the attempt to bring back the joint into as nearly as possible a working condition; in other words, to preserve the articular surfaces for use. It is necessary to look on the remaining head as a

partial sequestrum, for its nourishment cannot be complete in its detached position and, therefore, the problem is to graft this on the shaft by the method which will give the greatest possibility for a firm and strong union. The opportunities for such union are best met by putting cancellous tissue to cancellous tissue, without intermediary aid from extraneous material of any kind. This can be done by the method of grafting the head on the upper and inner portion of the trochanter, concaving the remaining head until cancellous tissue is found, and rounding off into a convex surface the upper and inner portion of the trochanter, so that it will fit into this concavity which has been made in the femoral head. By a distinct but not extreme abduction of the leg, from 65 to 75 degrees, the muscle pull strongly forces the trochanter into its place in the head, and one has the ideal conditions for a union of these two surfaces. The results in these cases justify this operation. It is not a particularly severe operation, and the patient has a firm weight-bearing leg, with a joint capable of good function. The limitation of motion is not marked. Flexion is usually easily obtained to beyond a right angle, and both abduction and adduction are usual. When normal joint structures are absent, such an operation is contraindicated. In these cases, the operation for pseudoarthrosis is indicated, using the trochanter by placement into the acetabulum either alone or with additional structures, preserving all the muscles so that they may hold the bone in place, and thus give a useful joint, although with more limited function, than in one in which the structures are normal. When neither of these operations is advisable, either because of the large amount of destruction of the joint structures, the occupation of the individual, or because of other reasons which contraindicate the use of the remaining head in the acetabulum, or the attempt at pseudoarthrosis, arthrodesis is often indicated. The choice of position is important: One must compromise between the best walking and the best sitting positions. As a rule, flexion from 15 to 25 degrees is advisable. In spite of the shortening, it is wiser to have a few degrees of adduction, rather than of abduction.

DR. FREDERICK J. COTTON, Boston: There are a certain number of cases of ununited fracture of the hip in which the patient does very well without treatment, and in which one has no right to do anything. The patients to be operated on are the ones who are disabled from physical disability or from pain. Whitman says that all his operations resulted in osteogenesis of the bone. I have had a number of cases in which various repair operations have been done in which osseous union has failed. I do not recall any case in which the disability has not been in large measure done away with. If there is any kind of a head left I like to try to utilize it. But if the head is a thin shell I waver in what I ought to do. The results are satisfactory in Brackett's operation, except that the patients are run down pretty badly when they get to us. There is a class of patients in which that is a debatable matter. If the operation and convalescence is short and it is a young patient originally robust, I do the Brackett operation most satisfactorily. In the rundown cases Whitman's operation should be considered. It should be called, however, a destructive, not a reconstructive, operation, an operation in which the head is no longer an asset, and should be done when we discover that our bony asset does not seem promising. We should recognize that bone operations on the hip, whatever the technic, have not been uniformly successful.

DR. MELVIN S. HENDERSON, Rochester, Minn.: We cannot any longer consider cases of nonunion of the hip as hopeless, provided the patient is not too old and is in good general condition. I believe we can restore over 50 per cent. of these patients to function so that they can walk without crutch or cane. The several methods advocated are of value. I have had no experience with the Whitman operation, but have used the Albee, Brackett and Davison methods, and they are all good. In the pegging operation, there must be sufficient of the neck of the femur left to make good apposition to the head of the bone. The roentgenogram is apt to be deceptive and should be taken with the foot in inversion and eversion. I remember that some years ago Ryerson showed me a roentgenogram in which the neck of the femur seemed to be almost completely absorbed, and at operation he found the neck to be very little absorbed, and the bone peg driven through restored the hip to practically normal appearance. We must be careful not to traumatize too much. We should do as little dissection as possible. Very free dissection, although it gives you a beautiful exposure, leads to considerable stiffness of the hip afterward owing to adhesions about the joint.

DR. HUBLEY R. OWEN, Philadelphia: There is no hard and fast rule for treatment of fracture of the femur; we have to select the appropriate treatment for each case. I do not agree with Dr. Whitman that his cast is easy to apply, for I find it is not easy and I believe the bad results are due to the fragments slipping while we are applying the plaster of Paris. In the application of the plaster of Paris, Whitman states that he seldom had to go over and apply it to the other thigh. Practically always I apply the cast to the other thigh. There is difficulty with a stout person in applying it properly otherwise. I usually take the upper shell of the cast off after eight weeks and start massage and passive movements of the knee. It has always been a question in my mind just when we are justified in going ahead with an open operation. I have confined my operations for nonunion to the method of Albee and have always used the tibia and never the fibula. The trouble I have had with the bone peg operation is that I have not always gotten the peg in where I want it. Different ways have been devised for being sure of the direction of the peg. I do not see why the fluoroscope should not be used after the small pin is put in to see whether you have the proper direction and angulation.

DR. JOHN RIDLON, Chicago: All the claims made by the essayists can be substantiated, but there is one thing so far unsaid, and that is: what to do in the cases of so-called ununited fracture of the neck of the femur in which one cannot do these operations. In one such case I put the leg in full abduction and put it in a plaster cast; caused the man to walk on it, and got a good solid union at the end of eight months. This method of treatment should be used at least eighteen months with the patient walking before it is considered a case of nonunion—unless you want to operate for the sake of saving time.

DR. FRED H. ALBEE, New York: As to the source of the graft, that is unimportant. It is a question of the technic. In this particular condition above all others we wish the maximum number of osteogenic bone cells in the graft to live, and as this depends largely on accuracy of technic and fit, automatic electrically driven tools are essential. Accuracy of technic cannot be too strongly emphasized. The bone graft peg offers the most satisfactory anatomic and functional results. This is the most ideal operation, but it cannot be done when the neck has been largely eroded. The next choice is an operation in which the dead femoral fragment is removed, the great trochanter with its attached muscles is turned outward, and the stump of the femoral neck and upper end of the femur is placed in the acetabulum. The third type of operation consists of ankylosing the hip by mortising together femur and acetabulum, supplemented by a graft from the outer table of the ilium. The results from these plastic operations have been most satisfactory in my experience.

DR. EDWIN W. RYERSON, Chicago: Many of these bone pegs and nails are driven in horizontally through the trochanter, and sometimes fail to enter the head and neck. Roentgenograms of many cases have been published which show an entire lack of knowledge of the proper method. It is useless to do that kind of work. The peg must always go up at a slant from a point below the trochanter. Secondly, the destruction and erosion of the head and neck of the femur are in many cases much more apparent than real, on account of the foreshortening in the roentgenogram due to rotation of the distal fragment of the femur, and also the decalcification of both fragments from disuse. This decalcification will disappear if the bone is repaired by nail or peg so as to place the fragments in apposition and hold them in apposition until union has occurred.

DR. WILLIS C. CAMPBELL, Memphis, Tenn.: Nonunion may occur in 10 per cent. by the Whitman or any other method of

treatment. If the union has not occurred at the end of three months, the case should be considered ununited and a bone graft inserted through the trochanter and neck. In all cases in which we have employed this measure early, before atrophic changes occurred, we have been rewarded by success — solid bony union and a useful, and in some instances, a normal member. Consequently, I cannot emphasize too strongly bone grafting early, or just as soon as we find union has not occurred. To determine the position of the graft, a series of roentgenograms should be made during the course of the operation. First, after reduction; second, with the drill inserted; third, with graft in position. The fluoroscope is unreliable in this region. In the cases in which extreme atrophy has occurred we cannot expect union of the neck by any method. The head should be removed as suggested by Brackett and the neck inserted into the acetabulum. The method described by Whitman, of attaching the trochanter at a lower level, is an excellent one, as it takes up the slack in abduction, rendering the hip more stable. I first employed the same procedure three years ago.

DR. ARMITAGE WHITMAN, New York: I wish to make it clear that the operation is done only on those patients who desire it for relief of symptoms for which they think the operative risk is justifiable. In regard to Dr. Cotton's statement as to the satisfactory results following fibrous union, it is quite true that a number of such fibrous unions may be perfectly satisfactory. I doubt, however, whether Dr. Cotton would venture to predict with certainty that, in the event of failure of osseous union, fibrous union in that particular case would be satisfactory. We prefer the reconstruction operation because we believe it of advantage in removing absolutely the percentage of uncertainty involved in such cases, and we call it "reconstruction" because we believe it reconstructs a neck when the neck is entirely absorbed.

THE CLINICAL DIAGNOSIS OF HEREDOSYPHILIS *

HENRY F. STOLL, M.D.
Assistant Visiting Physician and Syphilologist, Hartford Hospital
HARTFORD, CONN.

For one not specializing in the diseases of children to appear before a group of distinguished pediatricians merits an explanation, if not an apology. My presence here is due to the fact that within the last few years I have been consulted by a number of adults whose symptoms were due to prenatal syphilis, unrecognized until irreparable damage had been done. This was not due to parental neglect in seeking medical advice; in fact, most of the patients had been quite continuously under medical care since early childhood. In the hope of possibly averting similar tragedies, I have thought it worth while to review a few of the cases.

Failure to recognize herodosyphilis may be due to several reasons, among which those that appear to be the most important are:

1. Failure to appreciate that syphilis is very common and affects all ranks of society.
2. The neglect of the Wassermann test. A positive reaction is the most constant symptom during infancy and early childhood.
3. Failure to realize that in late heredosyphilis the Wassermann is very often negative.
4. Incomplete histories, and the failure to study symptoms collectively.
5. Lack of familiarity with the common stigmas.
6. Failure to study other members of the family.

* Read before the Section on Diseases of Children at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

Time will permit only a brief discussion of the last three. A complete history, always important, is particularly important in this group of patients. The symptoms considered singly are often not significant,[1] but if viewed collectively they frequently become very suggestive—an acute infectious disease not infrequently unmasks an unsuspected heredosyphilis. I know of no better way to illustrate how easy it is to miss prenatal syphilis than by citing one of my own mistakes: In 1911, a woman, aged 31, came to me for an examination of the lungs. She had always been delicate and following an attack of so-called grip a week previously, had slightly blood-streaked sputum several times. In addition, her appetite was poor and she had lost considerable weight. I could not, however, convince myself that she had tuberculosis, and so advised her. The correctness of this opinion in no way excused me for missing the true condition. Nine years later she was referred to me by her physician for treatment for neurosyphilis. At this time, owing to the fact that her previous record was temporarily mislaid, I took another history. I have arranged in two columns in the accompanying tabulation the data obtained at these different

OBSERVATIONS AT DIFFERENT EXAMINATIONS *

1911	1919
Very delicate child: "catarrhal."	Severe nervous trouble about seventh year; was so ill, recovery despaired of.
Slight thyroid enlargement, age 10.	About twelfth year, marked "drawing sensation" in feet, necessitating removal of shoes to stretch feet.
Several years ago lost sight of right eye; "shock."	Severe "growing pains" in legs.
Very easily exhausted.	Knee jerks discovered to be absent in childhood.
Very poor appetite.	After birth last child severe pain in back; later very severe darting pains in legs, etc.
15 pounds below usual weight.	Mother had ptosis of one eyelid.
30 pounds below maximum weight.	Oldest brother died infant; oldest sister "hemorrhage in back of eyes" (choroiditis?).
Recent "grippe" with blood-streaked sputum.	Children ill a great deal, one mise.
Father and mother died at age of 45; pneumonia.	Physical findings: unequal immobile pupils; optic atrophy; absent knee jerks; blood Wassermann test, positive; spinal fluid Wassermann test, negative.
Two sisters; one had tuberculosis.	Diagnosis: tabes dorsalis, juvenile type.
Husband well.	
Four children.	
Physical findings: not tuberculosis.	

* In the left hand column, the history as obtained in 1911 contains no clue as to the true condition. On the right are listed the significant facts elicited in 1919. If this column is "added up," a provisional diagnosis of juvenile tabes can be made even without the physical findings.

examinations; in the right-hand column appear the data from which a diagnosis of juvenile tabes might have been made years before. Comment is unnecessary. The so-called stigmas are numerous and varied; some are very apparent while others are detected only on careful examination. It is true that the pathognomy of many if not all can be questioned, yet the occurrence of several in an individual establishes one of the most definite clinical pictures we have. It is quite another matter, especially in adults, to deduce that the symptoms are due to the prenatal syphilitic infection. To do so one must in the first place be sure that syphilis might be responsible for the symptoms, and secondly that no more probably etiologic cause can be found. This, of course, applies to our interpretation of a positive Wassermann reaction as well.

1. The presenting symptoms in 125 children with congenital syphilis recently studied by Dr. L. T. Royster (Am. J. Syph. 5:131 [Jan.] 1921), were as follows: swollen knee, 1; injuries, 3; circumcision, 1; skin eruptions, 3; poor school work, 2; delinquency, 2; pain in chest and back, 1; enuresis, 1; indigestion, 1; general examination, 7; headache, 5; earache, 1; adenoids and tonsils, 37; swollen cheek, 1; nausea, 1; sore mouth, 1; glands of neck, 1; syphilis, 1; inflamed eyes, 1; painful micturition, 1; discharging ear, 1; defective vision, 7; sore throat, 6; abscessed ankle, 1; whooping cough, 1; feeding, 42.

Time will permit me only to show some of the more common stigmas. When one considers the countless number of spirochetes that are present in the skin, it is not surprising that skin manifestations are frequent. The deep linear scars in the lips extending out into the skin are one of the most trustworthy signs (Fig. 1). Scarring at the angles of the mouth results from the long continued ulceration that sometimes occurs. Similar scars may be present about the anus.

Fig. 1.—Girl, aged 15, with multiple lesions, exhibiting scarred lips, and scars at angles of mouth. Wassermann test positive. A younger sister with a negative Wassermann test had scars at the angle of the mouth only.

Fig. 2.—The furrowed or "scrotal" tongue; Wassermann test, negative; mother's Wassermann test, weakly positive.

If we examine the skin with especial care we shall sometimes see small, achromic, "punchedoué" cicatrices rather generally distributed over the body. Great care should be taken to exclude other causes, especially variola or varicella. It is believed that they indicate the site of previous spirochetal nests. In apparently healthy infants, Fischl and Steinert [2] state, a supposedly harmless staphilococcus skin lesion may often shelter spirochetes and spread them broadcast. In several such cases nothing but a positive Wassermann test in the mother suggested looking for spirochetes in the vesicular fluid. The high, narrow palate so often associated with other stigmas should always awaken our suspicions. The deeply furrowed tongue (Fig. 2) referred to by the French as the "scrotal" tongue has long been recognized as a sign of much significance.

To Sir Jonathan Hutchinson we are indebted for first drawing attention to the fact that congenital syphilis sometimes leaves its mark on the teeth, though we must accredit Fournier with making the most extensive study of the effects on dentition. He demonstrated that prenatal syphilis may delay the eruption, alter the shape, size and arrangement, and prevent or distort the enamel formation. The most characteristic change is that of hypoplasia, often referred to incorrectly as atrophy, the classical example being the notched upper central incisors of the permanent set known as Hutchinson's tooth (Fig. 3). Though generally accredited with being the most pathognomonic of the stigmas, it is relatively uncommon. The so-called triad keratitis, deafness and notched incisors is almost a medical curiosity. Hypoplasia of the other teeth, Sir Jonathan did not consider significant. It is however, very often caused by hereditary syphilis. The lack of enamel over the distal part of the tooth sometimes makes it resemble a cuff projecting below the sleeve. At other times the distal or hypoplastic part of the tooth looks as if it had been pinched by artery forceps while still soft. The hypoplastic tip of the canine sometimes suggests the tip of a kernal of corn, both in shape and in its yellow color, while at other times its terraced appearance resembles a Burmese pagoda (Fig. 4). When the hypoplastic part has crumbled away, a puckered appearance results as though the edge had been drawn up with a shirring string.

More common than the Hutchinson tooth and of equal significance is hypoplasia of the sixth year molar, referred to in France as Fournier's tooth and in England as Moon's tooth (Fig. 5). As shown in Figure 6, it is the only one of the permanent teeth the enamel of which is laid down before birth. When the normal enamel-coated convolutions of the crown are replaced by a rough, jagged, yellowish mass, we have positive proof that something was interfering with the fetal growth during the last months of intrauterine life. If in addition to the hypoplastic sixth year molar, the incisors and canines are hypoplastic, we know that the influence that began before birth continued to act during the first two or three months after birth. There is a definite line of demarcation where the hypoplastic crown of the molar joins the normal body of the tooth. It looks as though a string had been tied tightly about it. Because of the vulnerability of these teeth due to the lack of enamel, they readily decay, and for that reason in adults we are apt to find that these teeth are lacking or crowned. Gold crowned molars are often a monument to a prenatal tragedy. It is quite commonly believed that

Fig. 3.—Hypoplasia of upper central incisors (Hutchinson's teeth), also upper lateral incisors and canines as well as all the lower incisors and canines. A study of Figure 6 makes it evident that the process interfering with the enamel deposition began during the latter part of the first month after birth (crescent in upper central incisors) and was again active during the third month. (Hypoplastic line in the middle of all the upper and lower incisors and the tips of the upper and lower canines.)

Fig. 4.—Hypoplastic upper canines, deciduous teeth; note terraced appearance; note absence of other teeth; keratitis; Wassermann test positive.

2. Fischl, R., and Steinert, E.: Arch. f. Kinderh. 69: 399, 1921.

congenital syphilis does not affect the deciduous teeth, notwithstanding the fact that Sanchez noted the effects at the end of the eighteenth century.[3] This impression is incorrect and due, no doubt, to the fact that in order to have the deciduous teeth affected, the infection must take place so early in interuterine life (between the seventeenth and nineteenth weeks) that death occurs as a rule either before or soon after birth. In several of my cases the detection of the changes in the first teeth led to the diagnosis of congenital syphilis (Fig. 4). Had the grave significance of the hypoplasia in this little girl been appreciated, it might have been possible to prevent the severe attack of interstitial keratitis that for a time seriously jeopardized her eyesight. Occasionally, owing either to an increase in enamel bodies or a hypoplasia of the interenamel substance, white lines appear having the same crescentic form seen in enamel hypoplasia. This is distinctly uncommon, yet in one instance (Fig. 7), when associated with hypoplasia of the distal half of the upper lateral incisors, it furnished the first clue. This boy of 6, who was small for his age, was an eight months baby, weighing less than 5 pounds at birth. He was never well and had been under the care of a children's specialist for some time, though without benefit. He had a rather large forehead and enlarged tonsils and adenoids. His Wassermann test was positive. The father had a syphilitic spondylitis and a positive Wassermann test.

Fig. 5.—Hypoplastic sixth year molar; Fournier's or Moon's tooth; the canine and incisors also show hypoplasia.

Though of much significance, the saber case tibia is rarely encountered except in Italians and negroes. The whole time allotted to this paper might with profit be devoted to a consideration of hereditary syphilis of the bones. The osseous changes may be the only signs of congenital syphilis in the fetus and be unsuspected till revealed by the roentgen ray.[4] Fournier referred to the tibia as the "determining bone," as lesions of the upper third so often established the diagnosis of an unsuspected congenital syphilis. Acute epiphysitis, the pseudoparalysis of Parrot, is sometimes mistaken for acute scurvy. But it is in late childhood when the Wasserman test is so often negative, that the greatest number of mistakes are made. With the exception of acute fulminating osteomyelitis, no operative procedures should ever be performed on a child's osseous system till after a careful examination for hereditary syphilis has been made, clinical and serologic. Tuberculosis and syphilis sometimes coexist, and both conditions may require treatment. The child shown in Figure 8 had a positive Wassermann test, yet the pig test was positive for tuberculosis. Multiple syphilitic lesions of the bones and soft parts are difficult to differentiate from tuberculosis. The boy illustrated in Figure 9 and his brother presented multiple lesions; both had positive Wassermann tests. I have seen what appeared to be an identical case, diagnosed as tuberculosis, because of a negative Wassermann test, in which recovery ensued with heliotherapy.

Syphilis should always be suspected in children showing eye palsies. The child illustrated in Figure 10 shows ptosis of one eyelid, a paralysis of both superior recti and marked lateral nystagmus. The teeth are exceedingly hypoplastic. She was small for her age and had an advanced mitral stenosis, though she had not had rheumatism. A number of observers have drawn attention to the fact that stenosing lesions of the mitral valve are frequently due to hereditary syphilis. This is especially to be suspected if associated with an arrest of development and interstitial nephritis. Her Wassermann test was positive. The mother, a microcephalic, feeble-minded, alcoholic, sexually immoral woman with bilateral ptosis, had a negative Wassermann test. One of the mother's brothers was a mentally deficient epileptic; his blood and spinal fluid Wassermann tests were negative, though a robust sister had a positive test. The maternal grandmother had old corneal scars and a weakly positive Wassermann test. There is considerable to suggest that the child was a third generation syphilitic, yet the mother's sexual promiscuity makes it uncertain.

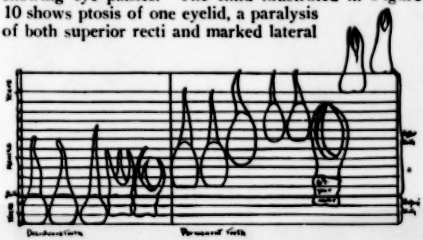

Fig. 6.—Chart showing time of inception of calcification (dentinification) of the teeth (Stein, J. B.: Dental Cosmos **55**:691 [July] 1913).

In a number of heredosyphilitics we have observed what we have designated as "knock knee elbows" (Fig. 11). It is an increase of the normal carrying angle, due apparently to an overgrowth of the internal condyle of the humerus which throws the forearm to the outer or radial side. This occurs sometimes with limitation of extension. We have as yet not determined definitely that this occurs only with hereditary syphilis, but we have been impressed with its occurrence in this disease. Painless bilateral effusion of the knee joints (Fig. 12) should always suggest hereditary syphilis. It is one of the more uncommon manifestations.

Fig. 7.—Hypoplasia of tips of upper lateral incisors and of interenamel bodies in upper central incisors producing the crescent white line; deciduous teeth; Wassermann test positive.

3. Quoted by Cavallaro, Joseph: Dental Cosmos **50**, Nov.-Dec., 1908; **51**, Jan.-Feb., 1909.
4. Shipley, Pearson, Weech and Green: Bull. Johns Hopkins Hosp. **32**:75 (March) 1921.

By means of the stigmas already discussed, we are often able to arrive at a diagnosis by two methods. The common one, which might be termed the direct method is relatively simple. Having excluded, so

Fig. 8.—Coexistence of tuberculosis and syphilis; pig test of the pus from the wound positive for tuberculosis; Wassermann test positive.

far as possible, all other causes for the presenting symptoms, all the suggestive findings, both in the history and the examination, are recorded, and to each is roughly assigned the relative percentage of syphilitic probability; we then "add up the column," as it were.

The indirect method, to which I have referred[5] as the diagnosis by intensive familial study, does not appear to be very generally employed, perhaps because it is too time consuming. Yet with sufficient care and skill this method will often be positive when the Wassermann test is negative. In these case the signs in the patient may be few or entirely absent, but present in other members of the family. To illustrate this I will tell of another of my mistakes. About fifteen years ago I was sent by a physician to see a little colored baby who was suffering from an acute respiratory infection, complicated by some digestive disturbance. I observed nothing unusual in the child or in the mother. About ten years later he was brought to my clinic at the dispensary suffering from severe interstitial keratitis. At this time I noted that the mother had a most "telling smile," though I had entirely missed it before. She exhibited the most perfect example of Hutchinson's teeth in an adult that I have ever seen.

As a rule, owing to the soft condition of the cutting surface, these teeth early become worn down, and by the time middle age is reached they are very short and the crescent has entirely disappeared. The child's father had a negative Wassermann test; the mother's was faintly positive, while that of the child was strongly positive. This seems to be an instance of transmission to the third generation and, judging from the degree of activity, there is no reason why it might not be transmitted still further.

5. Stoll, H. F.: Hereditary Syphilis as a Cause of Chronic Invalidism, J. A. M. A. 67: 1885 (Dec. 23) 1916.

The W. family well illustrates the need of a general familial survey. A man of 29 complained of weakness and pains in various parts of his body. He was not delicate as a baby, though he was a bed-wetter to his eighth year. Because of dyspnea he could never run and swim like other children. He had the signs of advanced aortic regurgitation, and much albumin in his urine. He denied syphilis, and the Wassermann test was negative. His tonsils were slightly cryptic. Were they the focus of the infection? He had very slight linear hypoplasia of all four central incisors, quite insufficient evidence for a diagnosis of hereditary syphilis. It is true that enuresis occurs frequently in heredosyphilis, but there are many who do not consider it especially significant. Of course, aortitis is usually due to syphilis; yet the history conclusively proves that the lesion was present in childhood, and it is quite generally stated that syphilitic disease of the aortic valve is very rare in childhood. He did not present the signs of prenatal syphilis, and he had cryptic tonsils. There were several clues in other members of the family, but the most interesting were those furnished by the little brother.

At the age of 4 he was taken to a physician because of fever and green stools. Three years later he was examined by a pediatrician who found that he had "poor teeth, poor eyes, presenting a run down nervous state, eyelids inflamed, heart and lungs generally negative." It is further stated that "the child wants gen-

Fig. 9.—Multiple lesions suggest syphilis rather than tuberculosis; this patient had lesions of both sides of the face, both hands, and tibia; Wassermann test, positive. Lesion subsided under antisyphilitic treatment.

eral attention; advise outdoor school, eye specialist; child has slight chorea; if unable to get in outdoor school, *feed the child;* no medication, hygiene and diet advised." He was examined by a psychiatrict who

advised that he be sent to the state school for feebleminded children. Congenital syphilis apparently was not suspected, yet when his mother was carefully questioned a few years later she readily gave the following additional and suggestive information: He weighed 9 pounds at birth and was very healthy and strong, but when about 1 month old he developed a cold in his head, and a nose specialist who was consulted said he had contracted a cold at birth and had adenoids. He improved and was in good health until about 1 year of age, when he began cutting his teeth and during this time he had convulsions for about six months. He did not walk until his second year, and was always small for his age. Otherwise he seemed well, playing and sleeping normally. He had granular eyelids since

Fig. 10.—Ptosis of left eyelid; paralysis of both superior recti; masked lateral nystigmus; extreme dental hypoplasia; mitral stenosis; Wassermann test positive.

his second year. The "cold in the head," the convulsions and retarded development, notwithstanding his apparent health at birth, should have excited suspicion. Then, too, he presented the rather suggestive "keystone facies"—high broad forehead and small, pointed chin—and hypoplasia of his deciduous teeth. This boy, his sister and his mother all had positive Wassermann tests. The older brother, I learned later, had had a positive test a few years before.

It is interesting to note how quickly an observing nurse will learn to detect the more common signs. Some years ago a young woman was convalescing from an appendectomy. Nothing in her appearance had interested the surgeons in attendance, but the nurse on the ward suggested that I look her over; she also remarked that certain members of the family who had visited the patient were "interesting." The patient showed an old interstitial keratitis, deeply scarred lips and a markedly furrowed tongue. She also exhibited one of the less common stigmas, that of limitation of extension at the elbows (Fig. 13). This may be due to a previous and unrecognized epiphysitis and the hypertrophic change resulting therefrom. Her brother showed the classical saddle nose, prominence of the frontal bones, interstitial keratitis and an incomplete cleft palate. Another brother suffered from

Fig. 11.—The radial deflection of the forearm which we have referred to as "knock-knee elbow" appears to be due either to increase in the length of the inner condyle or to a lack of development of the outer condyle. This results in the outward deflection of the articular surface of the humerus. In these cases it is possible to approximate the forearms through their whole extent when the elbows are fully extended. Occasionally there is a coexisting limitation of extremities at the elbows. The pronounced types of this elbow have usually been associated with some of the recognized stigmas of heredosyphilis, but our series is too small to speak with finality. This child has numerous stigmas and a positive Wassermann test.

Fig. 12.—Painless effusion of knee joints; patient had interstitial keratitis; Wassermann test negative.

interstitial keratitis. The mother had small, immobile pupils; the father was not examined.

In the time at my disposal I have been able to consider only a few of the diagnostic problems presented

by this disease. The rôle played in the causation of the various endocrine dysfunctions, in hypertension, epilepsy, chorea, etc., cannot be discussed; nor could I speak concerning them with any considerable degree of positiveness, as in most of the investigations that have been made only the results of the Wassermann test have been considered. These conditions must be restudied clinically as well as seriologically. I hope I do not appear to speak disparagingly of the Wassermann test. I consider a positive reaction unquestionably the most trustworthy evidence of syphilis. But one must view with concern the decadence in the ability to make clinical diagnoses so manifest today

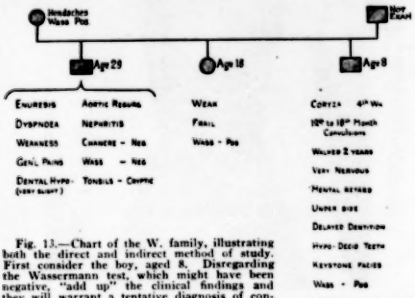

Fig. 13.—Chart of the W. family, illustrating both the direct and indirect method of study. First consider the boy, aged 8. Disregarding the Wassermann test, which might have been negative, "add up" the clinical findings and they will warrant a tentative diagnosis of congenital syphilis. Examination of the mother's and sister's blood would have clinched it. The data concerning the 29-year-old brother are insufficient for a diagnosis of syphilis, even if the Wassermann test had been positive. There is nothing to suggest heredosyphilis till the other members of the family are studied.

and the tendency to depend entirely for our diagnoses on the multicolored reports that emanate from the laboratory. It is no uncommon experience to meet clinicians who refuse to make even a provisional diagnosis until all the reports have come to hand.

I hope I have not conveyed the idea that the diagnosis of heredosyphilis by intensive familial study is a quick, easy method. It requires the expenditure of a good deal of time and patience, and a familiarity with the common symptoms and stigmas. Moreover, the method is not infalliable; yet in certain cases it will enable us to arrive at a diagnosis when the Wassermann test is negative.

179 Allyn Street.

ABSTRACT OF DISCUSSION

DR. ROGER H. BENNETT, New York: I hope that we shall see less congenital syphilis in the future than we have in the past. I have this hope because so much more work is being done in the prenatal clinics in the larger centers, and particularly in the larger hospitals. I am informed that at the New York Lying-In Hospital, where routine Wassermann tests are taken on every patient entered there, including the out-patients, 8 per cent. of all women examined have positive Wassermann reactions. If those figures are correct, and the mothers are properly treated over a prolonged period from early pregnancy, it is going to make a great deal of difference in the number of cases of congenital syphilis. I also agree that the laboratory may spoil the clinicians. I recall seeing in my clinic a baby that was just reeking with syphilis. It presented the typical textbook picture of congenital syphilis. One of the men in the seats asked, "Have you had a Wassermann test done?" The clinical evidence in this and many other cases is just as accurate and conclusive as a Wassermann test. Those of us who see many infants see a good deal of congenital syphilis and are able to recognize it early not only from a clinical standpoint but because we are making more Wassermann tests. One type of congenital syphilis that is not always recognized is the infant who is being properly fed, under the proper hygienic surroundings, yet does not gain in weight, does not progress normally and has no snuffles and no syphilitic lesions that can be seen externally. That is the type of baby in which we always have a routine Wassermann test made and frequently find congenital syphilis where no conclusive clinical evidence exists.

DR. J. I. GROVER, Boston: A physician sent me a baby for my opinion about a skin lesion which he thought might be chickenpox that was not clearing up but had begun to desquamate. It was very evidently a case of congenital syphilis. The mother had not told the physician that she lost a child a year ago that had congenital syphilis (with a positive Wassermann reaction). It died during the administration of neo-arsphenamin. She feared the new baby would be given the same treatment and die also. The mother and father had Wassermann tests made last year, and they were reported negative. In view of the fact that both babies had syphilis, the mother or father, or both, also have the disease. The positive syphilitic case was reported to the board of health last year. They did nothing about it to my knowledge, never approaching the mother or father. I do not believe we shall ever improve on the 8 per cent. incidence (just mentioned) until the state does something radical in all positive specific cases as it does in smallpox and diphtheria.

DR. FRITZ B. TALBOT, Boston: The tendency of medical students is to depend not on their observations and their actual knowledge of symptoms and signs of disease but on the laboratory. That is not entirely due to the medical student himself, but, in part, to the attitude of his instructors who like to make a pretty case and have all the sidelights available present before the students; and I think if those who are teaching medical students will bear that fact in mind, the clinical diagnosis will become much more common in the future.

Fig. 14.—Bilateral limitation of extension of elbows, possibly due to an old epiphysitis; patient had interstitial keratitis.

DR. E. C. FLEISCHNER, San Francisco: Special stress should be laid on two points: First, these hyperplastic lesions should excite grave suspicion of syphilis. We should not surmise that every one of these cases is a syphilitic child, but every case should be considered a potential case of syphilis. Second, Dr. Stoll emphasized a phase of the subject, the proper taking of family histories. Were we to enter the office of any one of us, irrespective of how well trained we may be, we would find a great deal to criticize, particularly with respect to the average family history.

DR. LOUIS W. SAUER, Evanston, Ill.: Was the child with the deficient enamel and the negative Wassermann test syphilitic?

DR. BORDEN S. VEEDER, St. Louis: I was interested in what Dr. Stoll pointed out in regard to the teeth, for there is an impression that the common type of teeth in hereditary syphilis are the Hutchinson teeth. In our syphilitic material at St. Louis I do not think it runs over 4 or 5 per cent.; but

this type of peg tooth which Dr. Stoll has described is far more common and should always cause suspicion of hereditary syphilis. There are a great many children with bad teeth of this type resulting from malnutrition in infancy who are not syphilitic. You must remember that tooth lesions in syphilis are due to trouble in the first few months of life when the tooth buds are developing. During the last year we have been going over our syphilitic material in St. Louis and have notes on about 500 cases between 1912 and 1920, and I must say that in spite of the fact that we have treated many of these cases intensively with various methods of treatment, it is my feeling that when the whole thing is summed up the results of treatment are most unsatisfactory. It is my belief that very little is to be gained by the treatment of the syphilitic child; for even if the syphilis is cured, all sorts of physical and mental defects are left. The point we must come to is the studying of the family in order that the mother and father receive treatment to prevent the birth of a child with hereditary syphilis. Treatment in this way gives very much more satisfactory results. Treatment of the syphilitic child, even though it brings about a negative Wassermann test, does not affect the alterations of the tissues which have been destroyed or changed by the pathologic process. Two things in regard to the syphilitic child must be recognized. One is that there is an invasion with the spirochetes which brings about the Wassermann reaction; secondly, there are certain definite permanent anatomic changes which are reactions from the syphilitic virus.

DR. HENRY F. STOLL, Hartford, Conn.: I do not consider a negative Wassermann test of any value in excluding heredosyphilis. It has been repeatedly shown that in older children particularly it is very often negative. This seems to be especially true in lesions of the bones. We should remember the classification Fournier gave us: in addition to the patients whose lesions are due to heredosyphilis, we see others suffering from the results of syphilis in the parents, who are not syphilitic. Syphilis is the most potent of germ plasm poisons; like alcohol and lead poisoning, syphilis exerts a blight on the ovum and actual syphilitic infection may not occur. In the later group antisyphilitic treatment is not indicated. I remember the advice of Delafield, concerning the discovery of a movable kidney. "When you find a woman with a movable kidney, don't cackle like a hen that has laid an egg." The advice is applicable to the stigmas of heredosyphilis. You fit together the physical signs and symptoms as one assembles a picture puzzle, and then if there is no other more probable cause, treatment for syphilis may be instituted. Hypoplastic teeth alone do not justify a diagnosis of heredosyphilis. Finally, we must not forget our responsibility in seeking other cases of syphilis in the family when an infected child comes under our observation.

Vital Statistics.—One of the most important functions of vital statistics is to determine accurately the risk of illness and of death of those actually exposed to a particular disease or disease group, or, in other words, to measure specifically the forces of morbidity and of mortality. The terms of the risks so determined are commonly expressed in ratios or rates indicating the proportions of the numbers affected to the numbers exposed, and the real value of such rates must depend upon the accuracy and the comprehensiveness of the data in regard to both the affected and the exposed. It is only when the data include such essential qualities as age, sex, race stock, and occupation that the resulting rates may be regarded as satisfactorily specific. In actual experience, the data available to vital statisticians are, in general, so lacking in comprehensiveness in these respects, that there exists hardly a single example of an accurately defined rate expressed specifically in terms of risk on the part of those definitely exposed to illness or to death from a particular disease. In consequence, the public health official is seriously handicapped in defining his problems, in devising administrative measures, and in estimating their value.—W. T. Howard, Jr., *Am. J. Hygiene* **1**:198 (March) 1921.

GRANULOMA INGUINALE

(GRANULOMA VENEREUM; GRANULOMA OF PUDENDA; ULCERATIVE VULVITIS; SERPIGINOUS ULCERATION OF GENITALS, ETC.)*

KENNETH M. LYNCH, M.D.
CHARLESTON, S. C.

One of the most troublesome conditions with which we have had to deal in Charleston is a group of granulomas of the groins, external genitalia and perineum, of essentially chronic and progressive character, intractable to various therapeutic measures, and generally classed under the broad and meaningless term of venereal condylomas or ulcers. This group of conditions has been fairly prevalent in this locality to my observation for several years, and the physicians of the community assure me that it has been a bugbear particularly in the public hospital for many years. I became interested in the matter the early part of this year from reading an article on granuloma inguinale by Campbell,[1] reporting three cases from the Bellevue Hospital and also including two cases which had already been reported by Symmers,[2] and calling attention to the value of intravenous tartar emetic therapy in the condition.

These five cases from the Bellevue Hospital are apparently the only cases reported in this country in which the organism first described by Donovan[3] in 1905 was found, although Grindon[4] reported clinical observations in three cases in St. Louis in 1913. In this connection it may be well to note the report by Driscoll[5] of three cases of "erosive vulvitis" in Richmond, from which he did not obtain Donovan's organism but a spirochete and vibrio, but whose illustrations resemble very closely the condition under consideration.

In the time between March 11 and May 1 of this year, we have had at least nine cases of this group in the wards of the Roper Hospital in Charleston, if any dependence is to be placed in the occurrence of Donovan's organism, as well as a number in the outpatient department, and in the experience of the staff such cases have been in more or less constant attendance in the hospital for many years. Looking back through my records, I can find tissues which have been examined from some thirty cases which, although no search was made for Donovan's organism, appear to have belonged to this group.

Of these patients one, a young negro who had a very extensive lesion of the groins, died of a secondary pneumonia, the exact cause of which was not determined.

In other words, in this community as well as probably throughout the South, if not throughout the nation, a fairly prevalent condition has been passing under the general class of venereal sores and has not been recognized as it has been in other parts of the world

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* Read before the Section on Pathology and Physiology and presented in the Scientific Exhibit at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

1. Campbell, M. F.: Granuloma Inguinale, J. A. M. A. **76**: 648 (March 5) 1921.
2. Symmers, Douglas: Granuloma Inguinale in the United States, J. A. M. A. **74**: 1304 (May 8) 1920.
3. Donovan: Indian M. Gaz. **40**: 414, 1905.
4. Grindon: J. Cutan. Dis. **31**: 236, 1913.
5. Driscoll, T. L.: Erosive Vulvitis, Arch. Dermat. & Syph. **1**: 170 (Feb.) 1920.

(notably the warmer countries) as an entity, and for which there is reputed to be a specific treatment.

From the study of the cases which have occurred in the hospital wards, I have come to the conclusion that there is apparently a type of pure case, but that there are also cases in which the condition is similar, if not identical, and Donovan's organism present but which appear to be secondary to or at least associated with other conditions, and consequently the consideration of which becomes more complicated.

Fig. 1 (Case 1).—Granuloma inguinale.

Fig. 2 (Case 1).—Granuloma inguinale healed.

TYPICAL CASES

In the first group I wish to give a brief summary of three illustrative cases:

Case 1.—V. H., a white man, aged about 25, a grocery clerk, two years ago had a chancre on the penis, which was followed by clinical syphilis with a positive Wassermann reaction. He received a thorough antisyphilitic treatment, including a number of injections of arsphenamin, with a clinical and serologic cure. Six months ago, after the Wassermann reaction had become negative, a papule developed in the left groin, broke, exuded a serous fluid, and gradually developed into a granulomatus ulcer which, at the time of admission, covered the whole left groin (Fig.1). The Wassermann reaction was then negative. This lesion was cauterized, and he received seven intravenous injections of 1 per cent. tartar emetic, administered every third day, aggregating 40 c.c., after which the lesion was completely healed (Fig. 2), and he was discharged. Improvement began in this case after the third injection, and progressed rapidly.

Case 2.—H. N., a negro man, aged 21, eight months ago, following gonorrhea, noted that a lump appeared in the right groin. This was opened by a negro physician, and instead of healing, progressed to a large ulcer covering the whole groin. He was treated at the local government clinic, where he proved to have a positive Wassermann reaction and was given nine or more injections of arsphenamin, he says with some improvement. On admission he had a large granulomatous ulcer covering the whole right groin, almost identical with that in the white man (Case 1, Fig. 1), and his Wassermann reaction was negative.

He was given seven intravenous injections of 1 per cent. tartar emetic aggregating 55 c.c. in a period of fourteen days. Improvement began practically immediately, progressing, until at the time of discharge there was only a broad, linear, tough scar, covered by a hard scab along the inguinal groove. He was instructed to return for further treatment, but failed to do so.

Case 3.—M. M., a negro woman, aged 17, about two years before had a small papule on the skin between the vagina and anus, which broke and exuded serum. From this a fungoid granuloma formed and extended in the course of a year up both groins and over the pubis and labia majora, and down over the perineum but apparently not onto the mucous membrane of the anus and vagina. The appearance of the lesion was that of a very soft, villous, spongy, vascular tissue which bled very easily (Fig. 3). There was a characteristic disagreeable odor and a serous discharge, with the formation of yellowish crusts but practically no pus. Her stay in the hospital had been about eighteen months, during which time she had been virtually bedridden, and had shown an irregular intermittent fever somewhat like typhoid temperature, at times up to 102, but usually not above 100. She had had many different kinds of treatment, including thorough curetting and cauterization and arsphenamin, although the Wassermann reaction had been repeatedly negative, with no result but a continuous extension of the lesion. Other than this lesion, nothing had been found abnormal. March 11, 1921, intravenous tartar emetic injections were started, and at the present writing, May 30, she has received twenty-seven doses aggregating 242 c.c. of 1 per cent. solution. At the end of three weeks, improvement began. She was then given a roentgen-ray treatment over the upper part of the lesion, and radium was applied over the lower part. Improvement continued slowly for a week or ten days thereafter, and then the lesion became firmer and patches of new epithelium appeared over the upper part. These extended, and healing progressed from the edges until now she is virtually well, all except two or three small spots being covered by a rather rough, dark, hairless skin, and healing is evidently continuing rapidly. Her general condition has improved markedly in the past three weeks, the patient gaining in weight, being no longer confined to bed, and her fever gradually disappearing.

CONSIDERATION

We have in these three cases apparently at the time pure cases of granuloma inguinale, all of them being in young persons, two men and one woman, two negroes and one white. The men showed typical groin involvement beginning in the perineum, the lesions in the white man and the woman starting as a simple small papule, the negro man possibly having a bubo as the initial lesion. The two men had had syphilis, but with serologic cures, and the granuloma developed in the face of apparent cure of syphilis and was unaffected by continued antisyphilitic measures. The woman had no evidence of syphilis or other genital infection, and also was unaffected by antisyphilitic measures. In scrapings of the lesions of all three, Donovan's organism was found, being abundant in the woman, but less numerous in the men.

Fig. 3 (Case 3).—Granuloma inguinale.

GRANULOMA INGUINALE ASSOCIATED WITH OTHER DISEASE

In addition to the seemingly pure cases there have been a number in which similar lesions infected by Donovan's organism but associated with other diseases led to a complication of the issue:

CASE 4.—S. E., a negro woman, aged 21, whose Wassermann reaction was + + +, three months previous to admission noticed a small papule in the left groin, which itched. She scratched it, and it ran bloody serum. From this progressed a granulomatous ulcer with fungoid edges involving the lower inguinal fold and extending up on the labium (Fig. 4). Without any preliminary antisyphilitic measures she was put on the tartar emetic treatment, receiving ten injections aggregating 93 c.c. of 1 per cent. solution in a period of twenty-six days. No improvement occurred, but rather a decided extension of the lesion. The granuloma was then excised, the edges of the incision joining without infection. She was continued on the tartar emetic as a safeguard to the healed area and discharged to the outpatient department for antisyphilitic treatment.

CASE 5.—M. F., a negro woman, aged 24, whose Wassermann reaction was + + + +, about one month previous to admission had a small pimple on the left labium majus about one week after sexual intercourse. This ulcerated and spread rapidly until at admission there was a large granulomatous ulcer of the left labium (Fig. 5) extending down over the perineum and along the drippings of the excretion down the thighs, with a profuse seropurulent exudation having a foul odor. She had an irregular fever varying from 99 to 102, usually down in the morning and up in the evening. She had received three intravenous injections of 1 per cent. tartar emetic solution aggregating 10 c.c., given at three day intervals, when she died suddenly. The necropsy revealed, in addition to the ulceration, a gangrenous condition of the inner edges of the fallopian tubes, and severe degenerative changes of the specialized tissues with myocardial dilatation.

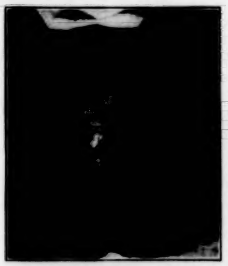

Fig. 4 (Case 4).—Granuloma inguinale in syphilis.

CASE 6.—B. T., a negro woman, aged 20, whose Wassermann reaction was positive, about five years before had some pimples on the perineal surface between the anus and the vagina. These broke, and the ulceration gradually extended over the whole neighboring region, until at admission there was a large granulomatous lesion involving the labia majora and perineum and extending down the drippings over the buttocks (Fig. 6). There was also a granuloma of each groin above the labia not connected with the lower lesion. She had been given a long and thorough treatment for syphilis, including a number of injections of arsphenamin in the outpatient department, without effect. She was admitted to the ward, where she had an irregular intermittent fever like Cases 3 and 5. Sixteen injections of 1 per cent. tartar emetic, aggregating 149 c.c., in a period of forty-four days accompanied by one radium treatment had no visible effect on the lesion, and she has now been turned back for further antisyphilitic measures.

CASE 7.—T. H., a negro man, aged 24, whose Wassermann reaction was + + + +, four years before had a nodule in the right groin which opened like a boil. Ulceration extended over the right groin, then a similar lesion began in the left groin and pursued the same course, and subsequently a sore occurred on the penis. At admission he exhibited very extensive granulomatous fungoid, ulcerative and nodular lesions with scar contraction and edema, of both groins from the spine of the ileum down onto the sides of the scrotum (Fig. 7), and a granulomatous ulcer of the surface of the right cheek at the angle of the jaw which, he says, started at the first development in the groin. He also says that his father died of the same thing. In the light of experience from the other cases he has not been given the tartar emetic yet, but has been put on antisyphilitic treatment, without as yet, after six weeks, any particular improvement.

CASE 8.—E. F., a negro woman, aged 19, whose Wassermann reaction was + + + +, and who had active gonorrhea, about three months before admission had a pimple in the perineum between the anus and the vagina which formed a bleb and ulcerated. About a month later kernels formed in both groins which abscessed and broke. On admission she exhibited three elevated, rounded, villous, fungoid granulomas about 2 inches in diameter, bleeding easily, with very little sensitiveness on scraping, one in each groin and one on the perineum (Fig. 8). She has received at the present, May 30, eight doses of tartar emetic aggregating 72 c.c., and also two injections of arsphenamin. At about the fifth dose the granulomas were noticed to be much firmer and had little tendency to bleed. Now they have shrunken considerably, are still firmer, and there is an extension of new skin over about a half inch at the edges. Donovan's organism was abundant in these granulomas on admission, but after the second tartar emetic injection there was a marked decrease in number with disintegration within the large mononuclears very evident, and after the fourth dose none could be found.

Fig. 5 (Case 5).—Ulcerative granuloma in syphilis.

CASE 9.—J. M., a negro man, aged 40, whose Wassermann reaction was negative, about one year before admission had a small swelling on the prepuce which ulcerated and gradually extended. He had had gonorrhea several times, the last about one year previous. On admission, the most of the penis was simply a ragged granulomatous mass with at least one half destroyed (Fig. 9). Two biopsies were made, both showing the usual picture of these granulomas. He was given twelve injections of tartar emetic aggregating 121 c.c. of the 1 per cent. solution over a period of twenty-three days, after which the most of the granulomatous tissue had sloughed away, leaving a stump which it was decided to trim and cauterize. Sections at this time revealed well marked squamous epithelioma, and the remainder of the penis was amputated and the groins cleaned out. No metastasis was found.

Fig. 6 (Case 6).—Granuloma in syphilis.

CONSIDERATION

This group of cases reveals combinations of conditions which have thus far proved very difficult obstacles. In all of them Donovan's organism has been prolific. Case 4, a granuloma of the groin infected by Donovan's organism coupled with syphilis, proved

intractable to tartar emetic. Fortunately, it was amenable to excision. In Case 5, a rapidly extending lesion infected by Donovan's organism, coupled with syphilis and evidently a general infection of some kind, the patient died. Case 6, a long standing granulomatous condition, infected with Donovan's organism possibly

Fig. 7 (Case 7).—Granuloma inguinale in syphilis.

grafted on suppurating buboes and coupled with syphilis, has thus far proved resistant to arsphenamin. Case 8 is apparently a granuloma of the perineum, then extending to ruptured gonorrheal buboes in the groins, coupled with active gonorrhea and syphilis. From a combination of arsphenamin and tartar emetic therapy in this case improvement has begun, and the indications for a cure are strong. Case 9 seems to have started as a granuloma of the penis, although preceded by gonorrhea, which developed into epithelioma in the course of tartar emetic administration covering twenty-three days. It seems, therefore, that the usual case is one in which the granuloma is secondary to either syphilis or gonorrhea, in five of the nine here reported there being present either one or the other at the time, and some both, while three of the remain-

Fig. 8 (Case 8).—Granuloma upon ruptured buboes.

ing four patients had immediately previous to, if not actually at the time of development, either syphilis or gonorrhea or both. There is then only one case, Case 3, in which there was no other proved previous or existing venereal infection, and this patient may have had gonorrhea or some other infection, of which there was nothing remaining.

BACTERIOLOGIC AND BIOLOGIC CONSIDERATIONS

In all of the cases here reported, the organism first encountered by Donovan was obtained in smears, the more acute and progressive the lesion the larger numbers present. This organism, or at least what we take to be the same, has been easily secured in culture. Figure 10 shows the intracellular and extracellular organisms as seen in smears from several cases. On account of the character of tissue reaction (Fig. 11) in the lesion, extensive search has been made in all of these cases for fungi, spirochetes and protozoa, without success, although a number of peculiar bodies, the nature of which is as yet undetermined but which must be differentiated from protozoa, have been encountered. In fact, the lesion is often remarkably clear of even ordinary surface contaminants, and usually nothing but Donovan's organism has been encountered after keeping the lesion clean for a time. Under the tartar emetic treatment the organism undoubtedly decreases in number, and finally disappears; in some cases when it has been abundant, disintegration in the cells and disappearance of the mass of infection has been evident after three of four injections. The organism secured in culture is pathogenic for rabbits when injected subcutaneously, but no experimental infections resulted from planting the organism on surface abra-

Fig. 9 (Case 9).—Granuloma of penis.

sions or from injecting scrapings of the sores subcutaneously. The virulence of the organism in culture varies apparently in proportion to the severity of the case from which it comes, some from the most active clinical cases producing a spreading gangrene with death of the rabbit in a few days, while those from the least active cases lead to a nodular induration which may persist for two months or longer, and may or may not slough with the production of a granulomatous ulcer (Fig. 12) which tends to heal in four or five weeks.

In Case 7 is recorded an infection of the face by Donovan's organism. So far as I have been able to determine, this is the first record of its appearance in other than the lesions on and around the external genitals. In this connection I wish to record finding a similar organism, if not the same, in a granuloma of the back and in three chronic ulcers of the leg, in none of which cases was there any lesion of the genitals or neighboring parts, all four patients having negative Wassermann reactions, all giving histories resembling those of fungus infections, and some improving remarkably on the tartar emetic treatment. The study of these and other similar cases has just been started.

The bacteriologic part of this study is as yet uncompleted, and I have reserved an opinion as to the exact nature of the organism which is the subject of dispute, Walker[6] identifying it as a capsule bacillus of the *Bacillus mucosus-capsulatus* Friedländer group; while Arago and Vianna[7] name it the type species, *C. granulomatis*, of their new genus, *Calymmatobacterium*. In fact, I think the proof is not yet final that Donovan's organism is the cause of the condition or that we are dealing with only one condition. The observation of Goodman[8] in reporting four cases in Porto Rico, that the spirochetal organism described by Wise was encountered in one which failed to show Donovan's organism, while the other three did, is confirmatory to the records of other workers.

TARTAR EMETIC THERAPY

In this work I have used the U. S. P. commercial tartar emetic (antimony and potassium tartrate), in 1 per cent. solution in physiologic sodium chlorid solution or distilled water, sterilized by filtration. Knowles,[9] in a discussion of the same treatment in kala-azar, recommends in that condition only the use of the "heavy powder," but I could find no reference to a division of the product into "light powder" and "heavy powder." Our usual procedure is to start with 3 c.c. of the 1 per cent. solution diluted to 10 c.c. with either sterile physiologic sodium chlorid solution or distilled water, increasing the dose 2 c.c. every third day until 12 c.c. of the undiluted 1 per cent. solution is reached. At this stage some nausea and vomiting has been encountered, and the dose has been reduced when this occurred. Larger doses have not been given, and no other reaction has been seen except some rather severe local inflammations when the drugs escaped into the tissues. Experience in these cases leads me to believe that in the pure condition prompt healing will result in fairly extensive lesions within about four or five weeks, and even in the most extensive, persistence in the treatment will effect results in time. Case 3 of this series appears to be one to invite encouragement even in the most extensive.

Fig. 10.—Donovan's organism; direct smear and culture.

However, when the condition exists as a complication of some persisting disease, as in the case of syphilis, tartar emetic alone appears to be powerless. Hereafter, in the cases of granuloma plus syphilis, we expect to use the tartar emetic between the injections of arsphenamin as we have done in Case 8. When it is possible to do a complete excision of the lesion and support healing with tartar emetic, the promise of early results is better, and even curetting extensive granulomas and cauterizing them down to the base accompanied by tartar emetic injections appears to offer earlier recovery than with the tartar emetic alone. For the present we look on these cases from the therapeutic standpoint as divisible into four classes:

1. Small granulomas, amenable to excision, followed by tartar emetic injections.

2. Pure cases in which curet and actual cautery remove the exuberant tissue, with follow-up tartar emetic injections until healed, and at longer intervals for some time thereafter.

Fig. 11 (Case 1).—Granuloma inguinale.

3. Pure cases in which curet and cautery may not be used but which will heal under persistent tartar emetic therapy.

4. Other diseases, particularly syphilis, complicated by granuloma infected with Donovan's organism, in which tartar emetic alone appears to be without effect.

In the first three groups I think we can expect to obtain good results. In the fourth, an effectual combined therapy to fit each case must be evolved.

ABSTRACT OF DISCUSSION

DR. BALDWIN LUCKE, Philadelphia: How do you obtain your material for diagnosis? Do you make surface scrapings, or do you go deeply into the tissue? Have you been able to obtain Donovan-like bodies from the experimental lesions?

DR. KENNETH M. LYNCH, Charleston, S. C.: The organisms are found in the scrapings. If the lesion is kept clean for several days, they may be obtained directly from the surface. The purest and best preparations are obtained a bit below the surface. You do not have to go deep. A simple scraping will give an excellent preparation. The Donovan organism has been recovered from the experimental lesion after inoculation from culture.

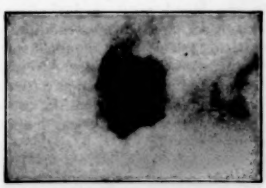

Fig. 12 (Rabbit 3).—Experimental ulcer culture from granuloma inguinale.

Aneurysm of the Hand.—Arnobio and Silvio Markues have encountered only one case of this kind in twenty years of practice, and know of only thirty-five that have been published. The tumor in their patient had developed at a point repeatedly bruised by the shovel, and its nature as an aneurysm was not suspected until the sac perforated during its removal. In their communication in the *Annaes Paulistas de Medicina*, July, 1920, p. 3, they quote a few cases on record of similar diagnostic blunders.

6. Walker, E. L.: J. Med. Res. **37**: 427 (Jan.) 1918.
7. Arago and Vianna: Mem. do Instit. Oswaldo Cruz **5**: 221, 1913.
8. Goodman, Herman: Ulcerating Granuloma of Pudenda, Arch. Dermat. & Syph. **1**: 151 (Feb.) 1920.
9. Knowles, R.: Indian J. M. Res. **8**: 140, 1920.

ACTION OF RADIUM AND ROENTGEN RAYS ON NORMAL AND DISEASED LYMPHOID TISSUE *

ISAAC LEVIN, M.D.
NEW YORK

My associates and I have ascertained in a series of clinical and experimental investigations that the lymphocytes circulating in the blood are most readily influenced by radium and roentgen rays, while all the other normal types of leukocytes and the erythrocytes possess a greater resistance. Normal blood of a turtle contains from 3 to 10 per cent. of polymorphonuclear leukocytes and from 97 to 90 per cent. of lymphocytes. After radiation the relative amounts of the two types of white cells in the blood of the turtle change so that the polymorphonuclears appear in about 80 per cent., as against 20 per cent. of the lymphocytes. The normal blood of a frog contains from 10 to 20 per cent. of polymorphonuclear leukocytes and about 80 per cent. of lympocytes. After irradiation the numerical proportion changes so that the number of polymorphonuclears in the frog equals from 70 to 80 per cent., and of the lymphocytes from 30 to 40 per cent. The following phenomenon observed in the course of this investigation supports strikingly the conception of the specific action of the rays.

The experiments consisted in the injection of an emulsion of yeast into a normal frog, which was followed twenty-four hours later by irradiation of the animal with roentgen rays or by an insertion of a radium emanation capillary into the dorsal lymph sac of the frog. The injection of yeast is followed by a change in the blood of a frog similar to the one induced by the roentgen rays or radium. The change is most marked twenty-four hours after the injection and continues for a few days. Neither the roentgen rays nor the radium produced any further noticeable change in the numerical relationship between the lymphocytes and the polymorphonuclear leukocytes of the yeasted frogs. At the most, a slight additional decrease of the lymphocytes takes place. Evidently the polymorphonuclear leukocytes resist the action of the rays even when their relative number in the blood is increased.

The total count of the white cells of the frogs was practically unaffected either by the radiations or by yeasting. Apparently the mechanism of the action of the rays on the leukocytes of the blood consists in the destruction of the lymphocytes, which is then followed by the release of the polymorphonuclear leukocytes from the depots in the bone marrow or by an overproduction of this type of cells by the blood-forming organs.

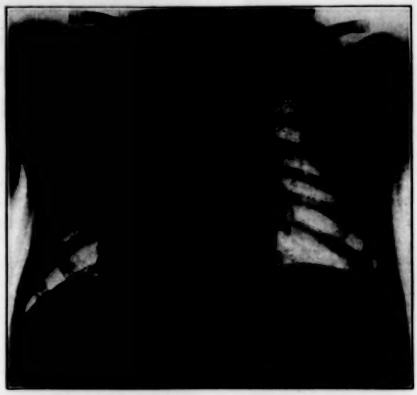

Fig. 1 (Case 1).—Before treatment: enlarged thymus.

Certain investigators maintain that the polymorphonuclear leukocytes are most readily destroyed by the rays. However, the analysis of their results shows that the destruction of the polymorphonuclear leukocytes is caused by the action of a lethal dose of the rays which produces a severe lethal leukopenia. Zoellner,[1] for instance, reports that the polymorphonuclear leukocytes are most severely affected, while the perusal of his experiments shows the following results: The blood of a normal guinea-pig contained 15 per cent. polymorphonuclears and 85 per cent. lymphocytes. Two days after irradiation the blood showed 54 per cent. polymorphonuclears and 46 per cent. lymphocytes; three days after irradiation, 76 per cent. polymorphonuclears and 24 per cent. lymphocytes. Near death there developed a severe leukopenia of from 12,000 to about 600 white cells, and then the whole blood smear may show only one or two lymphocytes and no polymorphonuclear leukocytes.

As a general rule, as stated above, in all the animals tested as well as in the human being, the lymphocytes are most severely affected and readily destroyed by the irradiations.

The specific radiosensibility of lymphocytes explains the action of radium and roentgen rays on normal and diseased lymphoid tissue. Intense irradiation of any region of the organism and not the direct raying of lymphoid organs is followed by a complete or partial destruction of the cellular elements of lymphoid tissues—the cells of the medullary part of the lymphatic glands, the malpighian corpuscles of the spleen, Peyer's patches of the intestines, the tonsils and the thymus gland of children. This destruction of the lymphocytes within the lymphoid tissue is accompanied by endarteritic obliteration of blood vessels and formation of dense connective tissue.

Normal lymphoid tissue is comparatively less radiosensitive than the various types of hyperplasias of lymphoid tissue. Furthermore, simple inflammatory hyperplasias are less radiosensitive than the neoplastic hyperplasias. It is comparatively difficult to influence with radium and roentgen rays bacillary infectious lymphomas like the tuberculous glands. Favorable reports were published recently of results of radium and roentgen-ray treatment of infected tonsils. I am investigating the subject in a series of

* From the Department of Cancer Research, Montefiore Hospital.
* Read before the Section on Pathology and Physiology at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

1. Zoellner: Strahlentherapie 9: 607, 1919.

V. 192

cases. The investigation is not yet completed, and the results of the study will be reported later.

Hodgkin's disease morphologically and etiologically must be classified with the infectious lymphomas. However, it presents a type of actively proliferating neoplastic hyperplasia of the lymphoid tissue and is extremely radiosensitive. Under the influence of radium and roentgen rays there takes place in a Hodgkin's lymphatic gland necrotization of lymphoid tissue accompanied by hemorrhages, proliferative endarteritis of the arteries, and ultimately replacement of the lymphoid cellular structures by dense connective tissue. Later on, part of this newly formed connective tissue is also absorbed and there is only a minute hard nodule left of the affected lymphatic gland. Frequently the gland disappears entirely. A similar process takes place within an enlarged spleen, when it shrinks to normal size under the influence of radium or roentgen rays. Microscopic examination of the spleen of a rabbit into which a radium emanation capillary was placed a week before the removal of the spleen disclosed necrosis of the lymphoid tissue and thickened walls of blood vessels.

Lymphosarcoma, which presents a true neoplasia of lymphoid tissue, is influenced by irradiation more promptly and completely than any other type of lymphoid hyperplasia. Thus, beginning with normal lymphocytes circulating in the blood and ending with lymphosarcoma, all types of normal and diseased lymphoid tissues are influenced more or less promptly by radium and roentgen rays.

In the following parts of this presentation a more detailed discussion will take place of the mechanism of the action of these agents on the various diseases of the lymphoid tissue.

Fig. 2 (Case 1).—After treatment: thymus normal.

STATUS THYMICOLYMPHATICUS

This disease of childhood consists of general lymphoid hyperplasia. The most important manifestation is the enlargement of the thymus, which causes frequent attacks of so-called thymic asthma. These attacks frequently cause sudden death of the patient. In Case 1, status thymicolymphaticus with frequent attacks of thymic apnea, the patient was apparently cured by radium and roentgen rays:

CASE 1.—G. M. A., boy, aged 3½ years, a gracile, handsome child, whose parents and a little sister were normal, on Dec. 27, 1918, had the first attack of thymic asthma and a second attack ten days later. The next day enlarged tonsils were removed, and a roentgenogram of the chest (Fig. 1) revealed an enlarged thymus. The plate showed the characteristic convex line of the thymic shadow passing into the cardiac shadow. Jan. 15, 1919, radium and roentgen-ray treatment of the region of the thymus was begun. During the treatment the child had attacks once in ten days, then at irregular intervals. The last attack took place, July 18, 1919. A roentgenogram (Fig. 2) taken one and a half years after the beginning of the treatment revealed a small thymic shadow with concave lines as it passed into the cardiac shadow. At present, two and a half years after the beginning of the treatment, the boy is strong and virile and has lost the gracile type of beauty characteristic of status thymicolymphaticus.

As stated above, the disease is caused not only by thymic enlargement but also by general lymphoid hyperplasia. The most important feature in this case is that there undoubtedly has taken place under the influence of the irradiations a correction of the whole lymphoid system of the organism, and the treatment was given only to the region of the thymus. This phenomenon will be discussed in more detail later.

HODGKIN'S DISEASE AND MEDIASTINAL TUMOR

As stated above, Hodgkin's disease is etiologically considered an infectious lymphoma. Nevertheless the main features of the disease set it apart from any known inflammatory disease of lymphoid tissue. Microscopically, the main feature of Hodgkin's granuloma is not a degenerative process, as in syphilis or tuberculosis, but an active proliferation of all types of cells of the lymph gland. This proliferation is limitless and ends only with the death of the organism, and therefore every cell within a Hodgkin's granuloma is biologically identical with a cancer cell. The disease is very promptly influenced by radium and roentgen rays. The opinion prevails that the action of the rays is only palliative and that ultimately the patients fail to respond to treatment. These unsatisfactory results are probably due to the fact that treatment is attempted only late in the course of the disease and is not pursued with sufficient energy. In several early cases I succeeded in arresting the disease for from six to eight years, which is a longer period than the patients usually remain alive untreated. The following is a case in point:

CASE 2.—Miss M. P., aged 20, a professional ballet dancer, came to me six years ago. The swelling in the right side of the neck (Fig. 3) was noticed two months previously and rapidly grew to the size noted in the photograph. The patient felt weak and had occasional attacks of fever. The state of her general health and the deformity made it impossible for her to continue her work. Examination revealed that the swelling was due to a packet of enlarged lymphatic glands of various sizes. There were no enlarged glands anywhere else. The spleen and the liver also were not enlarged. The patient received radium applications to the glands of the neck and no other treatment. Six weeks later the swelling completely disappeared, the shape of the neck became normal, and the patient went back on the stage. The treatment was continued for some time, and at present the patient is well and continues her professional occupation.

Mediastinal tumor presents the most distressing and clinically severe type of Hodgkin's disease. The promptness with which these massive tumors disappear under treatment is possibly the best evidence of the great radiosensitiveness of diseased lymphoid tissue. Case 3 may serve as an illustration:

Case 3.—M. J. H., a man, aged 24, sent to me for treatment in June, 1920, noticed swelling of the glands of his neck in 1918. The examination revealed enlarged lymphatic glands on both sides of the neck and in both axillary regions, and a diffuse bulging in the upper sternal region. Roentgen-ray examination disclosed a bulky diffuse tumor in the mediastinum. The patient received both radium and roentgen-ray treatment which were directed to the mediastinum, both cervical and axillary regions. The last examination in May, 1921, showed the mediastinal tumor to have been reduced considerably in size; the lymphatic glands are not palpable, the bulging in the sternal region has disappeared. The patient lost the respiratory mediastinal distress and is clinically well.

LYMPHOSARCOMA AND LYMPHATIC LEUKEMIA

Both lymphosarcoma and lymphatic leukemia are malignant diseases of the lymphoid tissue which manifest themselves with rapid and continuous proliferation of lymphocytes. There is a great deal of kinship between these two diseases and Hodgkin's granuloma. In fact, there is a great deal more of a clinical difference between lymphosarcoma on one hand, and lymphatic leukemia on the other, than there is between either of the two and Hodgkin's. Lymphosarcoma is a more localized disease than Hodgkin's, while lymphatic leukemia is more generalized than Hodgkin's. A number of authors maintain that the difference between the three diseases is rather one of degree than of kind. In any event, this is absolutely correct as far as the therapeutic action of radium and roentgen rays is concerned. All the three diseases give excellent immediate clinical results. The ultimate results are even possibly better in lymphosarcoma than in Hodgkin's, since in the former generalization does not take place as readily as in the latter. The ultimate results in lymphatic leukemia, on the other hand, are worse than either in Hodgkin's or in lymphosarcoma. This difference is probably due to the fact that leukemia is a systemic generalized disease from its incipience.

However, radium and roentgen rays do not act in diseases of the lymphoid tissue as a purely local agent. A local application of radium to one region seems to influence the whole systemic abnormality. Cases 4 and 5 will illustrate this phenomenon:

Case 4.—Mr. I. H., aged 62, developed a mass in the right axilla, which was removed surgically. Microscopic examination showed it to be lymphosarcoma. The condition recurred in six weeks, and the patient was then referred to me for radium treatment. The examination revealed a large diffuse mass, about the size of a grapefruit, occupying the whole of the axilla and invading the pectoral muscles. In the left axilla there was found an enlarged, freely movable gland the size of a hen's egg. The radium applications were made only at the right axilla, but with complete disappearance of the tumor in the right axilla the enlarged gland in the left axilla also disappeared. I have noted the same phenomenon in other cases.

Case 5.—Mrs. R. A., aged 60, referred to me for radium and roentgen-ray treatment for a condition of lymphatic leukemia in October, 1920, suffered from diarrhea for two years and noticed the enlarged glands a year before the beginning of the treatment. Examination revealed lymphatic enlargement everywhere, the spleen reaching to 2 inches below the umbilicus and the free border of the liver reaching to the umbilical line. The blood showed a total white count of 184,000. The differential count revealed 89 per cent. of small lymphocytes. The radium and roentgen-ray treatment was given to the region of the spleen. The treatment was followed not only by diminution in the size of the spleen but also by an improvement of the blood picture and by the practical disappearance of all the enlarged lymph glands. The diarrhea, however, is as distressing as it was at the beginning of the treatment, and the general weakness still persists. None the less, the general effect on the whole lymphoid system of local applications of radium to the area of the spleen is remarkable.

Fig. 3 (Case 2).—Tumor of the neck, Hodgkin's disease.

MYELOID LEUKEMIA

It was stated above that the polymorphonuclear leukocytes are not radiosensitive. I [2] have shown in a previous publication that myelocytes in conditions other than myeloid leukemia are also not radiosensitive. The myelocytes of myeloid leukemia which are so readily destroyed by radium and the roentgen rays must represent biologically a different type of a cell more akin to a cancer cell. The disease responds very promptly to irradiation, and again the remarkable fact is that local irradiation of the spleen changes the picture of the blood, though the myelocytes are derived mainly from the bone marrow.

Case 6.—Mr. W. P., aged 42, was referred to me in September, 1920, for radium treatment of a condition of myeloid leukemia. Examination showed the spleen reaching to about 1 inch above the umbilicus, and no enlargement of lymphatic glands or liver. Blood examination made before beginning of treatment gave a total count of 220,000 leukocytes. The differential count was: polymorphonuclears, 63 per cent.; lymphocytes, 2 per cent.; myelocytes, 31 per cent.; eosinophils, 1 per cent.; mast cells, 3 per cent. Examination of the patient in March, 1921, seven months after beginning of the treatment, revealed the spleen not palpable; leukocytes, 22,000; polymorphonuclears, 75 per cent.; small lymphocytes, 17 per cent.; myelocytes, 5 per cent.; eosinophils, 1 per cent.; mast cells, 2 per cent. The treatment consisted in local application of radium and roentgen-ray treatment of the region of the

2. Levin, Isaac: Ann. Surg. 70: 561 (Nov.) 1919.

spleen. The general condition and strength of the patient improved remarkably.

PERNICIOUS ANEMIA

Several English and German authors reported good results from treatment of cases of pernicious anemia with irradiations. In view of the fact noted above that radiation of the spleen influences favorably the course of various diseases of blood and lymphoid tissue, and the further fact that splenectomies are attempted for the cure of pernicious anemia, I decided to investigate what influence radiation of the spleen would have on the course of pernicious anemia. Two cases were selected with a perfect blood picture of a severe pernicious anemia and a large spleen. Since the hemoglobin showed 20 per cent., transfusions were done in both cases and radium was applied to the spleen once a week. There has taken place in both cases a general clinical improvement of the blood picture. It is impossible to ascribe this clinical improvement to the action of radium, since transfusion alone may temporarily improve the condition of the patient. Moreover, spontaneous remissions frequently take place in the course of the disease. It is remarkable, however, that in both patients the clinical improvement was accompanied by a return of the spleen to a normal size. This shrinking of the enlarged spleen could be caused only by the radium treatment, and there is a good deal of evidence to prove that the destruction of the erythrocytes in pernicious anemia takes place in the spleen. It would seem to me that the subject is worthy of further study.

CONCLUSION

The outstanding feature of the present investigation consists in the fact which it brings forward that, in diseases of the lymphoid tissue, radium and the roentgen rays do not act merely as a local agent which reduces the size of a tumor or an organ, but produce a generalized effect on the lymphoid system of the whole organism. It is impossible to assert at present with any amount of certainty what the mechanism of this influence is. Some investigators maintain that specific enzymes are freed from the desintegrating lymphocytes. The hypothesis is quite plausible, but there is hardly any work done yet to clear up the problem.

Lymphoid tissue in health and disease is of greatest importance in animal economy, and the action of radium and roentgen rays on this tissue presents the most remarkable phenomenon in biology. Experimental and clinical study of the problem will elucidate, on the one hand, the mechanism of the biologic action of the rays generally, and will also help in clarifying many mooted problems of structure, derivation and pathogenesis of the blood, blood-forming organs and lymphoid tissue both normal and diseased.

ABSTRACT OF DISCUSSION

DR. EDEN V. DELPHEY, New York: According to the experiments of physicists and physiologists, the effects of radioactivity on living animal tissues are the same whether the radioactivity is derived from radium or from roentgen rays. Columbia University teaches that the alpha rays from radium are stopped by the thinnest tissue paper; that the beta rays, which are identical with the cathode stream in the roentgen-ray tube, are filtered out by the aluminum capsule which is used to surround the radium in treating cases, and that the gamma rays are the same as the roentgen rays. Whether you use radium or the roentgen ray, you are employing exactly the same agent; therefore in referring to radioactivity you will understand that I mean either one. In using radioactivity two things are to be considered: intensity and volume. I am sorry that Dr. Levin did not state what dosage he used in his experiments because the efforts are different when the dosage is different, in regard both to intensity and to volume of the agent. If Dr. Levin will indicate in his printed paper the amount of radium he used, the nearness to the tissues acted on, the time of the exposure, and the dosage indicated in millicuries as well as the amount of screening he employed, it will be of a great deal more value to those who are interested in the subject. Some years ago, I learned that radioactivity influenced animal cells in direct proportion to the instability of their metabolic activity. Cells whose metabolic activity is most unstable are more quickly and completely acted on than those whose metabolic activity is more stable. The unstable cells are those of malignant neoplasms, gland cells, prickle cells of the skin, the intima of blood vessels, the leukocytes, etc., and they are stimulated to increased growth, more stimulated to erratic growth, and destructively stimulated by massive doses until they break down and are destroyed. The action of radioactivity may be compared to the results of a whip to a horse: a slight application, the horse trots—normal stimulation; a stronger application, the horse runs away—stimulation to erratic growth; continued beating of the horse results in his falling down dead—destructive stimulation. You can accomplish any of these actions you desire; but, unfortunately, while you are destroying the neoplasm at the surface, you may be stimulating the tissues to erratic growth deeper down, and while the surface may heal over and you think you have cured the neoplasm, such is really not the case. These patients will have, not a recurrence, but a continuance of the same malignant neoplasm of which you think they have been cured. Therefore, it is well to have a report, after five years, on all cases of malignant neoplasms, as these unfortunate patients have the bad habit of dying of the same incurable disease of which they have been cured.

DR. WALTER G. BAIN, Springfield, Ill.: Did you make any observations of the dosage action on the leukocytes?

DR. EDWIN R. LE COUNT, Chicago: What was the age of the child with the enlarged thymus? Of course, we are all well acquainted with these tragedies, deaths under anesthetics of one sort or another of children with enlarged thymic bodies. I am greatly gratified to see the clear picture of the enlarged thymus, because it does show that it is possible to examine children brought in for tonsillectomy or some other trivial operation, and determine the presence of the enlarged thymus and know the hazard that exists.

DR. ISAAC LEVIN, New York: The methods are described in the paper. We are a gathering of pathologists, and I take it we do not need to discuss in detail the method. As I stated before, in the beginning the action of the rays consists in a change of the numerical relationship between leukocytes and lymphocytes without influencing to any considerable extent the total count. The result is probably due to the destruction of lymphocytes and replacement by polymorphonuclear leukocytes from the bone marrow and other depots of lymphoid tissues. Of course, when the animal receives a much larger—lethal—amount of irradiation, then subsequently a complete leukopenia takes place with a change of the total count, sometimes from 12,000 to about 600, so that occasionally the whole blood smear may contain no more than two or three leukocytes of any type. To answer Dr. Le Count, the little boy was 3½ years old and had enlarged tonsils and adenoid tissue. As the chairman very well stated, if a roentgen-ray study of the chest of children were done more frequently before tonsillectomies and adenoid operations, sudden inexplicable postoperative deaths would happen less frequently.

THE OPERATIVE LENGTHENING OF THE FEMUR *

VITTORIO PUTTI
Professor of Orthopedic Surgery in the University of Bologna
BOLOGNA, ITALY

I wish to call attention to a subject which I think is of notable importance, that is, the operative lengthening of the femur. A shortening of the femur which does not surpass 2 inches and is not complicated by a deviation of the static axis of the limb does not require operative treatment. The patient himself easily learns to compensate this shortening, by lowering the pelvis or by putting the foot in the equinus position, and a raised boot is sufficient to hide the limp. If the shortening is caused by a deviation of the static axis of the femur, the patient will receive benefit from an osteotomy.

But I do not intend to discuss the cases which can be treated by the ordinary orthopedic methods, and I do not wish to consider those in which the shortening is due to a recent fracture, because the modern technic of fracture treatment enables us to give the femur its normal length.

I shall take into consideration only those cases in which the shortening, which has existed for a long time and surpasses 2 inches, must be looked on as definitive. Among these cases there are not only the results of old fractures, so frequently in evidence since the war, but also others, in which the shortening is due to a congenital or an acquired cause, which has damaged the normal growth of the femur. I speak of the femur, because it is only on this bone that I have operated, until now; but the method that I wish to lay before you may be used, I believe, with due modifications, on any other bones of the lower limbs.

We cannot say that a therapeutic problem so limited is one of the easiest to solve.

Some old surgeons, among them Rizzoli in Italy and Heine in Germany, finding it impossible to lengthen the short limb, thought to equalize the limbs by shortening the normal one. By this method, which has also been recently adopted, we reject the means which we at present possess and, thanks to which, the problem presents itself under a more favorable aspect.

PROBLEMS OF PROCEDURE

Two questions must be considered: (1) the degree and nature of the resistance which must be overcome, and (2) what means must be used to obtain the desired lengthening.

The greatest resistance is naturally offered by the bones, and their elongation can be effected only by osteotomy, which, however, must be performed in such a way as to facilitate the formation of the callus. But a strong resistance is also offered by the soft parts. Supposing that, in the cases we are now considering, the shortening has existed for a long time, we are in the same position as if we had to lengthen the soft parts beyond their normal proportions.

Is this possible without damaging the muscles, nerves and vessels? In a paper I published some years ago the question was fully discussed. Many facts drawn from clinical experience, from the study of the physical property of the tissues and from experimental researches, allow us to conclude that, to a certain degree, and by adapted methods, it is possible.

As to the nerves and vessels, experiments made on dogs by Magnusson have shown that these parts can support a lengthening of 2 or 3 inches without damage.

Not less important are the means of obtaining the lengthening.

Among the methods of traction which can overcome the greatest resistance with the least effort without doubt, Codivilla's method is to be considered; that is, the traction applied directly to the bones. But if we will apply the traction to the distal fragment in such a way as to develop its entire action, the countertraction must be applied to a tissue which possesses the physical properties peculiar to that on which the traction works, that is to say, the bone.

This is the principle on which the double transfixion method, used by Codivilla, Lambert, Steinmann and Hey Groves, is based. But the apparatus of these authors do not bring about that kind of traction which is indispensable to our purpose, i. e., continuous traction.

To overcome the elastic resistance of the soft parts gradually, and without excessive effort, which might be dangerous, the acting force also must be elastic and continuous, so that it can be developed according to the resistance it encounters.

DESCRIPTION OF APPARATUS

To this purpose I have had an apparatus made which I have called an *osteoton* and which I think will facilitate and diffuse the technic of the operative lengthening of the femur.

The apparatus consists of two parts: 1. Two large metal pins to be fixed, respectively, in the proximal and distal fragments of the fracture. 2. A telescoping tube in which is contained a strong spring which is pressed by a screw. The instrument is provided with two metal sockets into which the two pins run. The apparatus, which is the result of many experiments, is constructed so as to overcome the most powerful resistance. It can be completely taken to pieces and sterilized. Besides serving as a means of traction, it can be used at the same time as a dynamometer and as a measurer of the length obtained. Two scales dvided in millimeters, engraved on the apparatus, serve to give the operator at every moment the measure of the force of traction used and of the lengthening obtained. The surgeon has, therefore, constantly before him the most important elements for directing his action.

TECHNIC

The technic for using the apparatus is not difficult: The two pins, by means of two small incisions, are fixed on the bone, one in the subtrocanteric region, the other in the condyles of the femur. The pins are so constructed that they can be inserted without the use of a drill. When they have passed through the entire thickness of the bone, they must pierce the cortex. According to the necessity, these pins can be placed parallel or at angles, both on the same plane, or on different planes.

When the pins are fixed and when the osteotomy has been performed, the instrument is applied to the pins, so that we can begin a gradual traction, operating the screw which moves the spring.

* Read before the Section on Orthopedic Surgery at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

One of the greatest advantages of the apparatus is that it permits osteotomy to be performed in any point of the diaphysis that is on the callus, in the case of noninfected fracture, as well as outside the callus, when we fear to give rise to a latent infection. To perform the osteotomy, I make use of a motor saw with which I trace a Z-shaped incision like that used for tendon lengthening.

The double traction greatly simplifies the after-treatment. Above all, the traction is limited entirely to the bone which must be lengthened. The apparatus serves as a perfect means of immobilization, so that any other is superfluous during the time of the lengthening. So we avoid the damages to which the immobility may give rise; and the hip and knee can be kept in semiflexion, which is the most convenient position for obtaining relaxation of the muscles. The wound can be easily observed by the surgeon, and the bandages can be removed without difficulty. I generally leave the apparatus in place for thirty days, after which I put the limb in plaster of Paris, which is worn till a complete consolidation of the callus is obtained. In every case I have noticed that the consolidation is somewhat delayed.

In this manner I have operated on ten cases of old shortening of the femur, of which two were the result of war infected fractures. I have obtained integral lengthening of from 3 to 4 inches. One of the cases demonstrated that it is possible to obtain a lengthening of the femur beyond the normal proportion. I have never noticed any trophic disturbances. In one case the traction caused pain in the crural and sciatic nerve.

ABSTRACT OF DISCUSSION

DR. PHILIP D. WILSON, Boston: In 1918 I saw one patient with the traction appliance still in place. It is a very ingenious device. There is great difficulty in bringing a fracture down to complete approximation by skin traction alone, and we often have to resort to skeletal traction. Even with this, however, one seldom obtains a lengthening of more than one-half inch. Therefore, we can readily appreciate the ingenuity of a device of this kind which enables us to gain a length of as much as 3 or 4 inches. Lacking the device Dr. Putti described, we still have the alternative of shortening the femur on the sound side. This gives a good functional result, the muscles compensating for the increased shortening. The objection may be raised that this means operating on a normal limb which should not be exposed to operation. We must get more experience with this device.

DR. PAUL B. MAGNUSON, Chicago: Dr. Putti's procedure is most interesting and instructive, as it applies continuous extension to the shortened bone over a very considerable period of time, and at the same time holds the fragments in perfect alinement. This has not been accomplished by any other device. The final results speak for themselves. In the fourteen cases of this type in which I have operated, the lengthening of the femur has varied from 2½ to 4 inches. The traction has always been applied either by a compound pulley or a Hawley table, and has extended over a period of from twenty minutes to half an hour. In three of these cases a toe drop developed which lasted from two to three months, owing to the stretching of the sciatic nerve, directly affecting the external popliteal. The results have all been satisfactory except in one case. The patient died in shock. The shock in this class of operation is tremendous. When we consider that the muscles, nerves and blood vessels of the leg are stretched and that bone must be cut by saw or chisel; that the muscles must be loosened up for a considerable distance around the site of operation on the femur, and that there is considerable hemorrhage, it can easily be estimated that this is among the most serious of all surgical procedures, and incidentally one of the most difficult. The operation which Dr. Putti does is certainly not as shocking to the patient as the one which I have been in the habit of performing, as the traction is maintained over a longer period of time, and, therefore, the stretching is done more slowly. Whether this method would be as successful in the hands of those of us who are less skilful than Dr. Putti is a question to be determined by our results. I doubt whether most of us have the surgical technic and the mechanical skill to do the operation and secure the results shown here. Patients who are selected for this operation must be young, strong and otherwise healthy; their general systemic condition must be gone into thoroughly before operation, and all chance of infection eliminated. At the time of the operation one must be prepared to combat shock promptly and effectively. It has been my experience that physiologic sodium chlorid solution with epinephrin chlorid, given intravenously on the operating table, is most effective in this particular case; and these operations are never done by me without preparing for combating this shock in advance of the operation and having everything accessible, the arm being scrubbed up and the instruments laid aside for giving the intravenous injection with the saline ready at hand, should it be needed. In the experimental work which we did at the University Research Laboratories on lengthening of shortened bones of the leg, which was published in the *University of Pennsylvania Medical Bulletin* in May, 1908, it was proved conclusively that if the technic was what it should be, the soft structures of the leg could be stretched for a considerable distance without any serious damage, and that the bones could be dovetailed and spliced successfully by holding the fragments in line and taking the weight from the site of operation while healing was taking place, and this Dr. Putti's apparatus does.

STUDIES ON ANEURYSM

I. GENERAL STATISTICAL DATA ON ANEURYSM*

BALDWIN LUCKE, M.D., Dr.P.H.
AND
MARION HAGUE REA, A.B., M.D.
PHILADELPHIA

This paper is to serve as an introduction to a series of studies dealing with aneurysm; it contains general statistical data on the incidence, location, sex, age, race, number and recorded diagnoses of 321 aneurysms studied postmortem at the Philadelphia General Hospital and the Hospital of the University of Pennsylvania. These data are compared with similar publications from pathologic and clinical sources, so that the sum total of aneurysm on which certain phases of this investigation were undertaken is well above 3,000. Osler's[1] conception of an aneurysm, "a tumor containing blood in direct contact with the cavity of the heart, the surface of a valve, or the lumen of an artery," has been adopted; and although, as Dr. Osler points out, this definition does not include every condition now spoken of as an aneurysm, it covers the lesions studied in this paper. We have limited ourselves to aneurysm of the heart and its valves, and of the aorta and the arteries within the body cavity ("intracorporeal" aneurysms): Aneurysms of the peripheral and of the intracranial vessels are not here included.

* From the McManes Laboratory of Pathology, University of Pennsylvania, and the Pathological Laboratory, Philadelphia General Hospital.
* Read before the Section on Pathology and Physiology at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

1. Osler, William, and McCrae, Thomas: Modern Medicine, Philadelphia, Lea & Febiger 4: 472, 1915.

GENERAL INCIDENCE; RELATIVE FREQUENCY IN DIFFERENT COUNTRIES

In the Philadelphia General Hospital, protocols of postmortem examination have been kept since 1867, in the Hospital of the University of Pennsylvania since 1875. Some 12,000 necropsies have been recorded (up to November, 1916), of which 10,600 were held at the former institution.

In the entire series, 268 subjects presented 321 intracorporeal aneurysms. The data appertaining to frequency, age, sex and race are based on the number of patients and not upon the number of aneurysms. In 2.2 per cent. of patients coming to necropsy, aneurysms were found. However, since only one out of every 6.4 patients dying at the Philadelphia General Hospital was examined postmortem (this being the average for the seventeen years ending in 1916), an accurate conception of the frequency of aneurysms in the living patient cannot be obtained.

study of aortic aneurysms, we have in Table 1 compared the relative frequency of aortic aneurysms only.

It has been remarked that of the Caucasian races, the Anglo-Saxon is a more frequent sufferer from aneurysm that the Teuton, and our figures support this belief. Thus, for the United States the average incidence in persons examined postmortem is one aortic aneurysm in forty-one; for Great Britain, one in seventy-four; for the Scandinavian countries, one in 109, and for Austria and Germany, one in 198. Again, it must be emphasized that in the United States only a certain percentage of patients are examined postmortem, while in Austria and Germany postmortem examination of hospital patients is the rule. Clinical observations also support the view that aneurysm is more frequently encountered in the United States and Great Britain than elsewhere. Thus, Osler [1] states that in the British army home contingent with a strength of 118,224 (in 1905) there were eighteen deaths from aneurysms; in Germany (1904-1905), with

TABLE 1.—RELATIVE INCIDENCE OF AORTIC ANEURYSM IN DIFFERENT COUNTRIES

Country	Author	Year of Publication	Source and Date	Number of Necropsies	Number of Aortic Aneurysms Found	Frequency
United States	Lemann	Am. J. M. Sc. 152:210 (Aug.) 1916	Charity Hosp., La., 1905-1914	2,000	67	1 in 29
	Osler	Modern Medicine 4:472, 1915	Johns Hopkins Hosp.	2,200	49	1 in 45
	Lucke and Rea	1921	Phila. Gen. Hosp., 1867-1916; Univ. of Pennsylvania, 1875-1916	12,000	278	1 in 43
Total				16,200	394	1 in 41
Great Britain	Nunnelly	Aneurysm of Abdominal Aorta, 1905	St. George's Hosp., London, 1841-1905	17,872	166	1 in 107
	Bryant	Clin. J. 23:71, 1903	Guy's Hosp., London, 1854-1900	18,678	325	1 in 57
Total				36,550	491	1 in 74
Scandinavia	Rash	Arch. f. Dermat. & Syph. 47:15, 1899	Kommune Hosp., Kopenhagen, 1892-1896	3,165	28	1 in 113
	Dahlen	Ztschr. f. klin. Med. 58:163, 1907	Seraphim Hosp., Stockholm, 1897-1906	2,325	22	1 in 105
Total				5,490	50	1 in 109
Germany and Austria	Bosdorff	Ueber Häufigkeit und Vorkommen der Aneurysma, 1899	Kiel Path. Inst., 1873-1888	5,353	28	1 in 191
	Bauler	Untersuchungen ueber die Rolle der Syphilis, etc., Basel, 1898	Basel Path. Inst. 1888-1908	9,570	58	1 in 165
	Vix	Zur Lehre ueber die Aorten-aneurysmen, Erlangen, 1904	Erlangen Path. Inst., 1882-1903	9,792	38	1 in 257
	Müller	Zur Statistik der Aneurysmen, Jena, 1902	Jena Path. Inst., 1885-1900	10,200	69	1 in 150
	Borowsky	Die Perforations-richtung der Aneurysmen der Aorta thoracica, Breslau, 1910	Breslau Path. Inst., 1892-1909	19,646	66	1 in 297
	Emmerich	Ueber die Häufigkeit der inneren Aneurysmen in München 1888	München Path. Inst., 1870-1888	8,669	52	1 in 166
	Juda	Die Beziehungen zwischen Aneurysmen und Tuberkulose, Erlangen, 1892	Städt. Krankenh. Dresden, 1851-1892; Erlangen Path. Inst., 1852-1891	8,871	35	1 in 253
	Cominotti	Wien. klin. Wehnschr. 14:843, 1901	Städt. Kankenhaus Triest	26,405	156	1 in 169
	Eppinger	Praktische Heilkunde 113:1; 114:1, 1872	Prager Path. Inst., 1868-1871	3,149	15	1 in 210
Total				101,905	517	1 in 198
Grand total				160,145	1,452	1 in 111

Yet, in general, these statistics show that aneurysms are not uncommon at these two hospitals, one of which, as a teaching institution, favors such admissions, while the other is the largest charity hospital in the United States.

It has long been recognized that the frequency of aneurysms differs in various localities. Hence statistical data based on postmortem examination have been selected for comparison from American, English, Scandinavian, German and Austrian publications. Table 1 shows that, in 160,145 postmortem examinations, 1,452 aneurysms were discovered; that is, one aneurysm occurred in every 111, or 0.9 per cent. patients examined postmortem. These figures are only relative, for it must be remembered that a certain proportion of patients possess multiple aortic aneurysms; however, the total number of postmortems and of aneurysms recorded is so large that fair conclusions may be drawn. Since most writers have confined themselves to statistical

an army of 555,777, there were four. Wolpert [2] states that in 74,744 patients treated at the Medical Clinic of the University of Berlin (1895-1905), aortic aneurysm was diagnosed in fifty-five instances, i. e., one person in 1,359. Eichhorst [3] (Medical Clinic, Zürich, 1884-1901) found twenty-eight patients with aortic aneurysm among 33,377 patients, i. e., one in 1,200. Dahlen [4] reports that in the Seraphim Hospital in Stockholm, twenty-two patients with aortic aneurysms were discovered among about 15,000 inmates (1897-1906); i. e., one in 790. Very different figures are obtained in British reports: Browne [5]

2. Wolpert, R.: Ueber die Häufigkeit und Enstehung des Aortenaneurysma, Berlin, 1905.

3. Eichhorst, H.: Handbuch der speziellen Pathologie und Therapie, Ed. 6, Berlin, Urban and Schwartzenberg, 1904, p. 284.

4. Dahlen, B.: Ueber einen Fall von Aorten-Aneurysma, mit Durchbruch in den linken Vorhof nebst einigen Bemerkungen über Aorteaneurysma, die fibroese Aortitis and Lues, Ztschr. f. klin. Med. 58: 163-196, 1907.

5. Browne, Oswald: Aneurysms of the Aorta with Especial Reference to Their Position, Direction and Effect, Cambridge, 1885.

mentions that at St. Bartholemew's Hospital (1867-1883) with a yearly average of 5,000 inpatients (i. e., 90,000) there were 228 with aortic aneurysm, i. e., one in about 350. Osler [6] gives the incidence of aortic aneurysms in 24,363 admissions to the medical wards of the Johns Hopkins Hospital (1889-1909) as 231; i. e., one in 105 patients; and lastly, Lemann [7] finds forty-seven patients with thoracic aneurysms in 15,513 outpatients at the Touro Infirmary, i. e., one in 300.

TABLE 2.—LOCATION OF THREE HUNDRED AND TWENTY-ONE ANEURYSMS

Heart and its valves		15
Heart	13	
Heart valves	2	
Aorta		278
Sinus of Valsalva	10	
Ascending arch	62	
Junction of ascending and transverse arch	72	
Transverse arch	46	
Descending arch	42	
Entire arch	19	
Arch (unclassified)	4	
Entire aorta (dissecting aneurysm)	1	
Thoracic aorta	31	
Abdominal aorta	40	
Aortic branches (and pulmonary artery)		28
Ductus arteriosus	1	
Coronary artery	1	
Innominate artery	13	
Left carotid artery	1	
Pulmonary artery	1	
Superior mesenteric artery	1	
Celiac axis	1	
Splenic artery	6	
Renal artery	2	
Internal iliac artery	1	

Therefore, both from clinical and from necropsy data, it seems fair to conclude that aortic aneurysm is more frequently found in the United States and Great Britain than on the European continent, or at least in the Teutonic countries. To explain this is more difficult. No doubt vascular syphilis is the underlying cause for the great majority of aortic aneurysms, and it may well be that the type of syphilis which tends particularly to involve the vascular system is more common in certain countries than in others. Whether there exist strains of spirochete having a selective affinity for the cardiovascular apparatus has not as yet been determined; but at least the researches of Marie and Levaditi [8] indicate that certain strains of spirochete produce lesions of the brain and cord, while others affect chiefly the cutaneous surfaces. We have learned in the last few years that most pathogenic bacteria are not entities but groups consisting of many types (streptococcus group, pneumococcus group, typhoid group, etc.), and that the different members of such groups behave in dissimilar fashion. Clinical experience has demonstrated that some of the many forms of syphilis occur rarely in certain countries and among certain races. Of the latter, an example is the incidence of tabes dorsalis and aortic aneurysm, among the white and negro population of this country. Tabes is fairly common in white peoples, but quite rare among negroes. Indeed, only in the last few decades has locomotor ataxia been observed at all in full blooded blacks.[9] On the other hand, the proportionate incidence of aortic aneurysm is far greater in the negro than in the white population.

All such facts may point either to the existence of different spirochetal strains possessing selective affinities and being particularly prevalent in certain countries or races, or to the predisposing influence on the vascular structures of racial charteristics.

LOCATION

The location of the aneurysms, the marked preponderance of aortic over nonaortic aneurysm, and the comparative infrequency of aneurysm of the various aortic branches is shown in Table 2. The arch of the aorta is most frequently involved, next the abdominal, and somewhat less frequently the thoracic aorta. Of the aortic branches, the innominate and splenic arteries are most often the seat of aneurysm. These findings in general correspond to most statistical reports, but are greatly at variance with the work of Edward Crisp,[10] "Table of 551 spontaneous aneurysms selected indiscriminately from the British medical and surgical journals, from the year 1785 to the present time" i. e., 1844). This writer in 1851 published a little known appendix [11] to his monograph in which he adds data (from the same sources as in his first paper) on 151 aneurysms, bringing the total number of his cases to 702. Since his appendix is now somewhat inaccessible, the general statistical data as to location of the aneurysms are here cited: thoracic aorta, 241; pulmonary, 2; abdominal aorta and its branches, 73; common iliac, 2; popliteal, 182; posterior tibial, 21; innominate, 22; carotid, 28; cerebral, 13; temporal, 1; ophthalmic, 1; subclavian, 25; axillary, 24; subscapular, 1; brachial, 1. Crisp's data are mainly based on clinical reports, selected, as he states, "indiscriminately"; hence not even approximate deductions as to the relative occurrence and distribution of aneurysms can be drawn from them, and the quotation of his tables without further qualification can only give a wrong impression as to the location of aneurysms.

The most striking feature of his tables is the extraordinarily large number of aneurysms of the peripheral arteries; in the 12,000 postmortem records on which the present study is based, less than a dozen of such aneurysms are recorded; and, judging from other clinical and postmortem statistics, aneurysms of the peripheral vessels are relatively uncommon. Crisp's statistics, are, however, not to be undervalued, for they contain a wealth of information.

TABLE 3.—INCIDENCE OF AORTIC ANEURYSM ACCORDING TO AGE

Age	No. of Cases
Under 20 years	1
From 20 to 29 years	9
30 to 39 years	32
40 to 49 years	81
50 to 59 years	60
60 to 69 years	42
70 to 79 years	18
80 to 100 years	4

AGE

Aneurysm may occur at any age, but it is most frequently found in early middle life. The incidence of

6. Osler, William: Syphilis and Aneurysm, Brit. M. J. **2**: 1509-1514, 1909.

7. Lemann, T. T.: Aneurysm of the Thoracic Aorta: Its Incidence, Diagnosis and Prognosis, Am. J. M. Sc. **152**: 210-222 (Aug.) 1916.

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9. Lucke, Baldwin: Tabes Dorsalis: A Pathological and Clinical Study of Two Hundred and Fifty Cases, J. Nerv. & Ment. Dis. **43**: 393-410 (May) 1916.

10. Crisp, Edward: A Treatise on the Structure, Diseases and Injuries of the Blood Vessels, London, J. Churchhill, 1847.

11. Crisp, Edward: Appendix to the Treatise on the Structure, Diseases and Injuries of the Blood Vessels, London, H. Teape & Son, 1851.

age, as recorded in our series in 247 patients, is given in Table 3. The youngest patient in the series was 12 days old; the oldest, 91 years.

The table shows that aneurysm may occur at any age, but that before the twentieth year it is very uncommon. Beginning at this age the curve of incidence rises gradually, to ascend somewhat sharply in the fourth decade to its maximum; there is a slight fall during the fifth decade, and from there on a steady decline.

TABLE 4.—SEX-AGE INCIDENCE

Author	Location of Aneurysm	No. Cases	Males	Females	Ratio M to F	Most Frequent Age Period
(a) Aortic aneurysms (collected from pathologic-anatomic sources)						
Biggs*	Aorta	34	27	7	3.9 to 1	Av. 44.3
Lemann†	Thor. aorta	47	35	12	2.9 to 1	35-55
Bauler‡	Aorta	58	37	21	1.5 to 1	Not stated
Vix§	Aorta	37	28	9	3.1 to 1	40-50 av.
Müller¶	Aorta	69	51	18	2.6 to 1	40-60
Kröger#	Aorta	48	38	10	3.8 to 1	Av. 52.2 M. 51.3, F. 56.1
Emmerich**	Aorta	51	35	16	2.2 to 1	40-60
Rasht	Aorta	28	21	7	3 to 1	40-60
Bryant††	Abd. aorta	54	50	4	12.5 to 1	30-40
Browne‡‡	Aorta	88	74	14	5.2 to 1	35-55
Brownel	Aorta	140	122	18	6.7 to 1	35-55
Hall§§	Aorta	98	89	9	9.9 to 1	35-55
Dahlen¶¶	Aorta	27	20	7	2.9 to 1	40-55
Total		779	627	152	4.1 to 1	
(b) Aortic aneurysms (collected from clinical sources, or from literature)						
Crisp##	Aorta	314	261	53	5 to 1	30-40
Borowsky†	Aorta (rupt.)	175	150	25	6 to 1	40-50
Maximoff*	Aorta	302	252	51	4.9 to 1	40-50
Maximoff*	Aorta	41	29	12	2.5 to 1	40-60
Wolpert‡	Aorta	55	22	33	0.7 to 1	Av. 53.3 M. 52.1, F. 70.7
Hall§	Thor. aorta	188	160	28	5.5 to 1	Not stated
Total		1,076	874	202	4.3 to 1	
(c) All aneurysms (collected from pathologic-anatomic sources)						
Bosdorff¶	All aneur.	94	51	43	1.2 to 1	60-80
Lucke & Rea	All aneur.	247	200	47	4.3 to 1	40-60
Müller‖	All aneur.	183	108	75	1.4 to 1	50-70
Emmerich**	All aneur.	58	39	19	2.1 to 1	40-60
Cominotti#	All aneur.	181	150	30	5 to 1	40-50
Juda**	All aneur.	48	31	17	1.8 to 1	60-70
Lidell††	All aneur.	243	200	43	4.6 to 1	30-40
Von Schrötter‡	All aneur.	220	146	74	2 to 1	40-50
Total		1,274	925	349	2.7 to 1	
(d) All aneurysms (collected from clinical sources, or from literature)						
Crisp‖	All aneur.	702	624	78	8 to 1	30-50
Lebert§	All aneur.	386	296	90	3.2 to 1	35-45
Total		1,088	920	168	5.4 to 1	
Grand total		4,217	3,346	870	3.8 to 1	

Crisp, Cominotti and von Schrötter stated only the male-female ratio; from this the actual numbers were calculated.

* Biggs, H.: Some Observations on Aortic Aneurysms, with a Report of Thirty-Four Cases with Autopsies, Am. J. M. Sc. 97:219, 1889.

† Reference appears in Table 1.

‡ Browne, Oswald: Aneurysm of the Aorta, London, H. K. Lewis, 1897.

§ Lidell, John A.: On Internal Aneurysm, and Its Relation to Sudden Death, Am. J. M. Sc. 53:46-81, 1867.

‖ Von Schrötter, L.: Erkrankungen der Gefässe, in Nothnagel: Spezielle Pathologie und Therapie, Vienna, Alfred Holder, 1901, 15, Part III.

¶ Lebert, H.: Krankheiten der Blut- und Lymph-gefässe, in R. Virchow's Handbuch, Ed. 2, Vol. V, Erlangen, 1867, F. Enke; also Traité de l'anatomie pathologique, I, Paris, J. B. Balliere, 1857.

The average duration of life after the clinical recognition of an aneurysm has been variously estimated and, as may be expected, no uniformity of opinion has been reached; but, in general, it is thought that the expectation of life in the average case is but little over two years. Hall [12] carefully analyzed thirty-five private cases (of intrathoracic aneurysm) and found that in twenty-seven of these the average duration of life after diagnosis was established was a little over two years and eight months. He has seen, however, a patient living for ten years. Nunnelly [13] finds that the average course of aneurysms of the abdominal aorta, from the first appearance of the symptoms, extends over from thirteen to fifteen months. Bosdorff [14] places the usual duration as from one and a half to two years; Emmerich, as from twelve to eighteen months. Crisp,[15] on the other hand, believes the average duration of life to be from eight to ten years. Thus one might quote a considerable number of writers. It is most probable that the duration of life depends entirely on the individual case, and on the care and treatment the patient receives.

As will be pointed out, the majority of aneurysm patients die from a disease independent of the aneurysm; in our series, only about one third died from rupture.

In Table 4 the age incidence is collected from various pathologic as well as from clinical sources. In all, 4,217 aneurysm cases are tabulated. The most frequent age period given by the different writers varies considerably.

The statistics are tabulated under four headings: (*a*) aortic aneurysms from postmortems; (*b*) aortic aneurysms collected from clinical sources and from the literature; (*c*) all aneurysms (including aortic) from postmortems, and (*d*) all aneurysms (including aortic) collected from clinical sources and from the literature. As far as aortic aneurysms are concerned, there appear to be noteworthy differences in the most frequent age periods given, the majority of cases occurring between the ages of 35 and 55. In the figures dealing with aneurysms in any location (this includes aortic aneurysms) more advanced age periods are stated by some authors. Thus, Bosdorff [14] gives from 60 to 80 years, and Juda [16] from 60 to 70 years as the most frequent age periods, but an analysis of the material on which their data are based reveals that both writers included a considerable number of small aneurysms of the cerebral arteries.

Aneurysms occur at different age periods in whites and blacks, in males and females. In Table 5 the average ages of these various groups are shown. The average age at which white persons suffering with aneurysm came to necropsy was 54.4 years, and only 45.3 years for negroes. A somewhat less marked age difference is shown to exist between men and women, the average of the former being 46.9 years, of the latter 52.8 years.

Similar difference in ages exists between white males and white females, and between black males and black females, while between white females and black males the marked discrepancy of fifteen years is seen.

SEX

In our series there are 200 males and forty-seven females (sex not recorded in twenty-one instances); this gives a ratio of 4.2 males to 1 female. Table 4 shows that practically all writers have found a similar preponderance of the male sex. The sex incidence has been grouped under four headings: (*a*) aortic aneurysms from postmortem statistics; (*b*) aortic aneurysms from clinical sources, or collected from the

12. Hall, F. de H.: Intrathoracic Aneurysm, Lancet 1:843, 869, 945, 1913.

13. Nunnelly, F. P.: Aneurysm of the Abdominal Aorta, Oxford, 1906.

14. Bosdorff, Ernst: Ueber Häufigkeit und Vorkommen der Aneurysma, Kiel, 1899.

15. Crisp (Footnotes 10 and 11).

16. Juda, David: Die Beziehungen zwischen Aneurysmen und Tuberkulose, Erlangen, 1892.

literature; (*c*) all aneurysms (including aortic aneurysms) from postmortem statistics, and (*d*) all aneurysms (including aortic aneurysms) from clinical sources or compiled from the literature. The total number of aneurysms collected in the table is 4,217; of these, 3,346 occurred in males and 870 in females, giving a ratio of 3.8 males to one female. Several writers (Bosdorff,[14] Müller,[17] and Juda[18]) record an unusually large number of females in their series; the same writers also give the most frequent age period at a very advanced time of life (i. e., from 50 to 80). Analysis of their reports shows that a relatively small number of aortic aneurysms was included, and that their figures are based on a relatively large percentage of aneurysms of the aortic branches and the cerebral vessels. One may, perhaps, draw the conclusion from the data that aneurysms of such arteries are somewhat more common in females than in males. The greater longevity of women, in general, may account for the advanced age periods given. Emmerich,[18] whose statistics (Pathological Institute, Munich) show an unusual proportion of females, explains this by stating that in Munich women did more hard manual labor than elsewhere. All these, however, are exceptions, and it may be stated that, in general, aneurysm occurs four times more frequently in the male than in the female sex.

TABLE 5.—INCIDENCE OF RACE, SEX, AGE, AND RACE-SEX RATIO

Race or Sex	Number Recorded	Average Age	Race-Sex Ratio
White	173	54.4	2.3 whites : 1 negro
Negroes	74	45.3	
Males	200	46.9	4.3 males : 1 female
Females	47	52.8	
White males	136	51.3	3.4 white males : 1 white female
White females	39	57.6	
Negro males	66	42.5	8.2 negro males : 1 negro female
Negro females	8	48.1	

RACE

Aneurysm seems to be particularly common in the negroes. In our series there are 173 whites and seventy-four negroes, a ratio of 2.3 whites to one negro. In 5,000 admissions to the medical wards of the Philadelphia General Hospital the ratio of whites to negroes was fifteen whites to one negro. Osler[1] gives the ratio for aneurysm as 2.6 white to one negro, while the proportion of white to colored patients in the wards (of the Johns Hopkins Hospital) was as four white to one negro. Lemann,[7] however, finds the difference between whites and negroes not at all marked. From his table on thoracic aneurysm it appears that among the males the aneurysms were about as frequent in white men as in negroes, while the negro female cases were relatively three times as frequent as the white female one. Our own figures, however, are similar to Osler's, and show the greater relative frequency of aneurysm in the negroes. The ratio of occurrence and other data are shown in Table 5.

NUMBER OF ANEURYSMS

While it is generally known that small aneurysms of the cerebral arteries are commonly multiple, the fact that more than one large aneurysm of the aorta or its branches occur not infrequently is often overlooked in clinical examinations. Thus, it is not unusual to find only one aneurysm diagnosed, yet two or more are discovered at necropsy. If, for instance, an aneurysm of the ascending arch coexists with one of the abdominal aorta, one or the other is frequently overlooked, often because no effort is made to search for multiple aneurysms. In our series, multiple aneurysms occurred in fifty three patients; that is, one in every five patients with aneurysm had more than one such lesion.

In detail:

In 41 patients, 2 aneurysms were present.
In 10 patients, 3 aneurysms were present.
In 1 patient, 4 aneurysms were present.
In 1 patient, 5 aneurysms were present.

These were chiefly aneurysms affecting the aorta, but in several instances an aortic aneurysm coexisted with an aneurysm of one of the aortic branches.

DIAGNOSIS

Aneurysms frequently escape clinical detection. A glance through the postmortem protocols tabulated by Bosdorff,[14] Browne,[5] Crisp,[15] Maximoff,[19] Dahlen,[4] Vix,[20] Kröger,[21] Przygode[22] and other authors shows that a very high percentage of aneurysms discovered at the necropsy table was not recognized clinically. Lemann[7] recently discussed the diagnosis, and failure to diagnose, of aneurysms, and cites Sir William Osler's dictum that there is no disease more conducive to clinical humility than aneurysm of the aorta.

The clinical diagnoses recorded on the postmortem protocols in our series are given in Table 6.

In this series the correct diagnosis, i. e., aneurysm, was recorded in only 43 per cent. of the cases. It must be remembered, however, that these records began in 1867, before the days of modern diagnostic methods. The conditions most frequently mistaken for aneurysm are given in Table 6.

TABLE 6.—CLINICAL DIAGNOSES RECORDED IN A SERIES OF TWO HUNDRED AND SIXTY-EIGHT CASES WITH ANEURYSMS

Diagnoses	Number of Cases
Aneurysms	95
Asthma	8
Chronic endocarditis	21
Chronic myocarditis	17
Pulmonary tuberculosis	9
Mediastinal tumor	2
All other diagnoses	71
Not recorded	45

SUMMARY

This paper contains a statistical analysis of 321 aneurysms of the heart and its valves, the aorta and the aortic branches.

1. In 12,000 postmortem examinations at the Philadelphia General Hospital and the Hospital of the University of Pennsylvania, 321 "intracorporeal" aneurysms occurred in 268, or 2.2 per cent., of patients examined postmortem.

17. Müller, Ernst: Zur Statistik der Aneurysmen, Jena, 1902.
18. Emmerich, Otto: Ueber die Häufigkeit der inneren Aneurysmen in München, München, 1888.
19. Maximoff, N.: Beitrag zur Statistik der Aneurysmen, München, 1910.
20. Vix, K.: Zur Lehre über die Aorten-aneurysmen, Erlangen, 1904.
21. Kröger: Statistik der Aorten-aneurysmen nach den Sektionsprotokollen von 1872-1899, Kiel, 1901.
22. Przygode, Paul: Ueber die Rückwirkung der Aorten-aneurysma aufs Herz, Giessen, 1909.

2. Comparison of statistics shows that aneurysms are more frequent in the United States and Great Britain than in the Teutonic countries.

3. The aorta is more often involved; the various aortic branches are relatively rarely the seat of aneurysms.

4. The most frequent age period for aortic aneurysm is the fourth and fifth decades.

5. Aneurysm occurs at an earlier age in the negro than in the Caucasian race.

6. Aneurysm occurs about four times more frequently in males than in females.

7. Aneurysm is relatively more common in the negro than in the Caucasian.

8. In fifty-three patients (about 20 per cent.), multiple aneurysms were found.

9. The clinical diagnosis was made in 43 per cent.

COCCIDIOSIS IN MAN AS A POSSIBLE SANITARY PROBLEM IN THE UNITED STATES

FRANK G. HAUGHWOUT
Protozologist, Bureau of Science
MANILA, P. I.

In 1918, I called attention [1] to the growing number of cases of human coccidiosis that were being reported from the war zones abroad, and ventured the opinion that the peculiar war conditions were not unlikely to bring about a spread of the parasites involved, and that coccidiosis might be expected to crop up at almost any time or place. This prediction now seems on a fair way to be fulfilled. The literature already contains records of eleven cases of coccidiosis discovered in the United States since I wrote my paper. Of these, four would appear to be autochthonous, and I propose to add another case just discovered by me in Manila, that I have reason to believe may have become infected in the eastern United States.

REPORT OF CASE

H. O. P., a man, aged 32, a resident of Georgetown, Ill., arrived in the Philippines, Dec. 19, 1920, and has since been attending to his business in Manila and the provinces. Early in February, while he was in Cotabato, he developed diarrhea and abdominal discomfort. His stools were watery and, so far as he observed, contained neither blood, pus nor mucus. He doctored himself with field remedies, and was feeling a little better when he returned to Manila, February 26. Soon after his arrival he ate two very heavy meals, and had a relapse of his diarrhea. He consulted Dr. Otto Schöbl of this bureau, who found numerous small amebas, whose species he did not determine, in the stool specimen submitted. The stool was not dysenteric. As the symptoms did not wholly abate, the case was referred to me by Dr. Schöbl. The patient, meanwhile, had been taking heavy doses of ipecacuanha on his own account (90 grains of the drug daily, in the form of Alcresta tablets) and the character of his stools suggested that he was suffering from ipecac diarrhea. On my own suggestion, he discontinued the drug and a day or two later his stools had become normal. I failed to find amebas in either the motile or encysted forms after several examinations, but I did eventually find a solitary cyst of a coccidian which, on subsequent study of abundant material, I have decided is *Isospora hominis* Rivolta, 1878 (emend. Dobell,[2] 1919). The case is still under observation, so I shall not go into details as to symptomatology except to state that so far the patient has shown no definite train of symptoms referable to the coccidial infection.

COMMENT

During the years I have been in the Philippine Islands I have studied several thousand stools in the search for intestinal parasites, and have never found a case of infection with any sporozoan parasite until this case came to me. My subjects have been drawn from nearly every part of the islands. I therefore think, in view of my observations and the observations of other men in the Philippines whose experience has been quite extended, that it is exceedingly unlikely that the infection of this case occurred here.

The patient spent the years 1915-1916 in Manila as a member of the scientific staff of this bureau. In 1917, he was at Trenton, Ont., where there was no obvious source of infection, and in 1918-1920 he was chemist at the government smokeless powder plant at Nitro, W. Va., which is about 15 miles from Charleston. He says the sanitation at the plant was excellent, but that the laboring force included men from many points in Europe. He thinks it not unlikely that the force included men from the eastern Mediterranean zone, where coccidiosis seems to be endemic.

Kofoid, Kornhauser and Plate,[3] in reporting on the examination of troops at Debarkation Hospital No. 3, in New York, record the finding of eight cases of *Isospora* infection in the men examined by them. Of these, six occurred in troops that had seen overseas service, and the other two in home service troops. Kofoid and Swezy,[4] in what would seem to be a continuation of that work, record eleven cases of sporozoan infection, of which seven were found in overseas troops and four in home service troops. In short, there is ground for the belief that at least four autochthonous infections have already been found in the United States. It is my belief that before a great while others will be found in the civilian population. These facts brought out by Kofoid and his co-workers seem to have escaped general notice and comment, even by the authors themselves, probably because they are buried in the tabulated reports of the findings. It would seem desirable to follow the peregrinations of these infected soldiers and to inquire into the histories of the apparent autochthonous cases. The purposes of this paper is to suggest such an inquiry.

I shall report in detail on my case in a subsequent paper, but it seems appropriate to me to add to my warning of 1918. So far as we have records of actual cases, coccidiosis in the adults observed seems not to have been a fatal or even a very serious affection. But our knowledge of the condition is very meager, and we have no pathologic studies to guide us. While it may be relatively harmless in adults, I submit that we have few or no data as to its effects on children or on persons of lowered vitality in whom it may be a much more serious matter.

The condition presents an interesting epidemiologic problem whose study should now commence with the seeming early development of the infection in the

1. Haughwout, F. G.: Infections with Coccidium and Isospora in Animals in the Philippine Islands and Their Possible Clinical Significance, Philippine J. Sc., B **13**: 79-93 (March) 1918.

2. Dobell, Clifford: A Revision of the Coccidia Parasitic in Man, Parasitology **11**: 149-196 (Feb. 28) 1918.

3. Kofoid, C. A.; Kornhauser, S. I., and Plate, J. T.: Intestinal Parasites in Overseas and Home Service Troops of the U. S. Army, J. A. M. A. **72**: 1721 (June 14) 1919.

4. Kofoid, C. A., and Swezy, Olive: On the Prevalence of Carriers of Endamoeba Dysenteriae Among Soldiers Returned from Overseas, New Orleans M. & S. J. **73**: 4-11 (July) 1920.

United States. The high resistance of the cysts to the action of chemical reagents and disinfectants, and the high degree of vitality of coccidial cysts in general, place the parasite on a far more dangerous plane, from the epidemiologic point of view, than obtains in the case of the other intestinal protozoa of man whose cysts are much less resistant to untoward environmental conditions.

Persons desiring to inform themselves regarding the morphology of these cysts, and those of other man-infesting sporozoa, are referred to the papers of Wenyon[5] and of Dobell,[2] which contains the best descriptions and illustrations of these parasites that have so far been published.

Clinical Notes, Suggestions, and New Instruments

FOREIGN BODIES IN RECTUM AND SIGMOID

G. MILTON LINTHICUM, A.M., M.D., BALTIMORE
Professor of Proctology, University of Maryland School of Medicine and the College of Physicians and Surgeons

I report two cases, the first because of its interest as a causative factor in an intractable fistula, the second because the object had ascended into the sigmoid and the method adopted in its removal offers a possible suggestion to others who may perchance have to deal with similar cases.

CASE 1.—A man, aged 28, in good physical condition, two years prior to coming under my service at the Maryland General Hospital had developed a perirectal abscess, which had been opened and drained at another institution. Complete healing had not occurred, and he was left with a fistula for which a subsequent operation was performed. Healing apparently took place, but later there was a recurrence of the fistula. The customary procedures failed to detect the causative factor. The fistula was complete, running from an external opening about three-fourths inch from the anal margin in the middle of the left posterior quadrant, with an internal opening about 3 inches up the rectum, having a lateral extension about 3 inches deep into the cellular tissues posterior to the rectum.

The tract was cut down on and presented nothing unusual; but on introduction of a finger to break up any trabeculae that might inclose pockets, there was felt at the bottom of the wound a sharp pointed object that felt not unlike a spicule of bone. Forceps carried along the palmar surface of the finger caught and pulled out a piece of wood 2 inches long and sharp at both ends. It had evidently been cut from a meat skewer that had been used in a roast of meat, and passed through the alimentary tract until it arrived in the rectum, where it was pushed through the wall and came to be lodged outside the bowel in the perirectal tissues. Its removal was followed by prompt healing of the fistula.

CASE 2.—A carpenter, aged 54, two days before had introduced a glass test tube through the anal orifice to relieve itching from worms. Digital examination disclosed nothing except a relaxed sphincter. With the sigmoidscope there could be seen the edge of the flange of the tube protruding from the sigmoid on the left about 9 inches from the anus. It was impossible to seize it with any ordinary forceps for fear of breaking, which would result in the sharp edges perforating the intestine with danger of peritonitis. A roentgenogram by Dr. Walton disclosed the tube occupying a loop of the sigmoid with the closed end pointing toward the umbilicus. By deep pressure the tube could be readily rolled around under the fingers, but could not be dislodged.

The question of removal was considered, and as there was no danger in delay, the man was fed on food with abundance of residue, followed by a pint of liquid petrolatum in the hope that the tube would be carried down and out in a stool. Because of its position, arrest of peristalsis and shape of the test tube with its closed end upward, no stool occurred, but the patient suffered some discomfort. Considering its removal by mechanical means, it was realized that unless it could be seized and drawn out through the anus an abdominal incision would be necessary.

It occurred to me that if it was possible to get something into the lumen of the test tube and expand it, perhaps it could be drawn out in that manner. A horsehair probang that was popular some years ago for the removal of foreign bodies from the esophagus before the advent of the esophagoscope suggested itself as a practical instrument for the purpose. The man being placed in the knee chest position, a pneumatic sigmoidoscope of 1¼ inches diameter was introduced until its distal end came in contact with the proximal end of the test tube, which occupied a relative position to the lumen of the sigmoidoscope of almost a right angle. Through the sigmoidoscope I passed the probang, while Dr. Reeder manipulated the tube over the abdomen, lifting and steadying it, while I passed into its lumen the probang, over the bristles of which I had fastened a rubber finger cot. When it was in the test tube, I expanded the rubber-covered bristles; which adhered to the sides of the tube so that it was readily and easily drawn down and out. The man suffered no ill effects from his experience.

The test tube was 15.5 cm. long and 2.5 cm. in diameter. There was no evidence of the presence of *Oxyuris vermicularis*. The absence of this and the relaxed sphincter suggest the use of the tube as probably due to a perversion. The height to which the tube had ascended was doubtless due to reverse peristalsis, as it was too far to be pushed up by the patient. Its further ascent was limited by the curve of the sigmoid.

817 Park Avenue.

5 Wenyon, C. M.: The Development of the Oocyst of the Human Coccidium: An Addendum, Lancet 2:1276 (Dec. 11) 1915.

NEW BLOOD COUNTING PIPET HOLDER

A. M. MOODY, M.D., PASADENA, CALIF.

The necessity for having some convenient method for carrying and transporting filled blood counting pipets is apparent.

The holder here illustrated is convenient and will allow one to transport filled blood diluting pipets without any danger of losing a drop of the contents. Furthermore, it provides centrally located laboratories with a means by which physicians who do not possess a microscope may collect the blood from their patients and then send the filled pipets to the laboratory for counting.

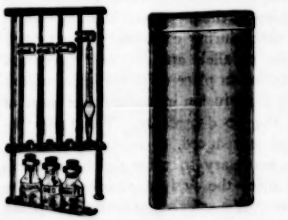

Fig. 1. — Device for transportation of specimens in blood counting pipets.

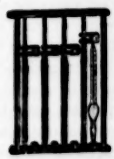

Fig. 2.—Method of inserting pipet.

The holder and case are so designed that they can be readily sterilized when necessary after contact with contagious diseases.

The device has been made in two models, one with diluting bottles and needle attached for use in homes, and the other for hospital use when the only problem is the safe transporting of the filled pipets to the laboratory.

The holder as illustrated is all metal with through and through rods on which are springs with holding cups attached. One end of the filled pipet is placed in the stationary cup and the movable cup is lifted enough to cover the open end.

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SATURDAY, SEPTEMBER 17, 1921

BLOOD VISCOSITY AND BLOOD PRESSURE

Blood has a viscosity four or five times that of water. The viscosity is maintained at a fairly uniform level, and in the normal person shows only a slight diurnal variation, depending on the intake of food and fluid. However, wide variations from the normal have been found in many disease conditions. For example, an increase in the number of cells, of the colloids in suspension or of carbon dioxid causes an increase in viscosity; and increases in the water, oxygen or salt content lower viscosity. So far as is definitely known, it seems highly improbable, according to Holmes,[1] that the viscosity of the blood is ever altered sufficiently to result in the production of symptoms in the absence of any complicating factor.

Several authors have suggested on theoretical grounds that a thickening of the blood might increase the blood pressure and play an important part in the production of vascular disease. However, as pointed out by Lyon,[2] few observers have found any relationship between viscosity of the blood and blood pressure. Blunschy [3] noted that, during exertion, viscosity and blood pressure were parallel; and Bayliss [4] suggested the use of gum solution in place of physiologic sodium chlorid solution for transfusion in hemorrhage cases in order to maintain the blood pressure. When the viscosity of the blood is reduced, a constriction of the arterioles may be necessary to raise the blood pressure, in order to offer the desired resistance to the heart and to prevent the arterial system from being too rapidly emptied.

Because of the general importance of the subject in both the diagnosis and treatment of disease, Lyon has endeavored to obtain information as to whether any relationship could be demonstrated to exist between the viscosity of the blood and the blood pressure, by examination of eighty normal persons and of more than 400 persons suffering with a wide range of disease conditions. He found that the blood viscosity rises steadily with increasing years, reaching a maximum in the period from 30 to 39, and thereafter falling slowly, the curve corresponding closely with those for the number of erythrocytes and the percentage of hemoglobin. On the other hand, blood pressure figures show no maximum in middle life but continue to increase through the later decades. In disease, Lyon found no definite relationship between blood viscosity and blood pressure, owing perhaps to the enormous power of compensation which the body possesses. In patients with anemia or cyanosis, alterations in the blood pressure appear to be very largely dependent on the thinness and thickness of the blood. The study suggested that the chief regulating mechanism in the circulation lies not in the arterioles but in the capillary areas. He concludes that the viscosity of the blood is an important factor in maintaining blood pressure, but that alteration in the thickness of the blood can be easily compensated for by the body.

It is especially interesting, however, in this connection to consider the view of Holmes as to the importance of blood viscosity in hemiplegia. In the aged, the blood viscosity remains stationary or falls, whereas the pressure is likely to be greatly increased. If such persons are subjected to dehydration through severe diarrhea, vomiting, etc., there occurs greatly increased viscosity, which may well result in pathologic phenomena. The observations recorded emphasize the importance of preventing dehydration of the tissues in the aged, especially in the case of those known to have vascular disease.

1. Holmes, W. H.: Relation of Increased Blood Viscosity to Transient Attacks of Hemiplegia, J. A. M. A. **76**: 1641 (June 11) 1921.
2. Lyon: Blood Viscosity and Blood Pressure, Quart. J. Med. **14**: 398 (July) 1921.
3. Blunschy: Cor.-Bl. f. Schweiz. Aerzte **38**: 664, 1908.
4. Bayliss: Proc. Roy. Soc., London **89**: 380, 1915.

THE LIVER AND SPECIFIC DYNAMIC ACTION OF PROTEIN

The liver, being the largest glandular organ of the body, has often been suspected in the past to be the seat of important metabolic phenomena, although in recent years it has become quite common to assign large physiologic duties to comparatively small anatomic structures. No one today is content to regard the secretion of bile, the most conspicuous performance of the liver, as its sole function in the organism; indeed, the production of bile has even been assigned a secondary importance by those who are inclined to magnify the less well known activities of the hepatic cells. The production of urea from its nitrogenous precursors is one of the reactions for which the liver has long been held responsible, although evidence is not wanting that urea can arise in other tissues also. Cases of liver disease have repeatedly been investigated in the hope of connecting the hepatic organ in some way with the "assimilation" and metabolism of the amino-acids arising by the digestion of protein in the alimentary tract. Although deamination of amino-acids and urea synthesis seem to be somewhat incomplete without the liver, they may nevertheless occur to a considerable extent. The consensus for the momen-

has been summarized by stating that in liver insufficiency the cleavage of amino-acids is not entirely normal, although striking departures are seen only in very severe cases.

The increase in heat production in the body following the ingestion of foodstuffs, and notably protein—a phenomenon to which Rubner first gave the designation "specific dynamic action of foods"—is probably associated with some unique stimulation of the body cells. Several years ago, Aub and Du Bois [1] studied the effect of feeding large quantities of meat to persons with normal torsos but reduced muscle area. The outcome, showing a relatively greater increase in metabolism than is noted in normal persons under the same conditions of diet, suggested that the stimulation of the cells is not confined to the mass of skeletal muscles or dependent solely on surface area. The viscera were naturally considered as a possible location of the phenomena leading to the specific dynamic action of protein. The latest metabolic investigations of Aub and Means [2] at the Massachusetts General Hospital on patients suffering from a variety of liver diseases give no support to the conjecture that the liver is solely responsible for the increased heat output provoked by a meal rich in protein. The basal metabolism was essentially within normal limits. The rate of absorption and utilization of protein in large quantities was usually normal, even in severe cirrhosis. Marked portal obstruction caused no delay in the appearance of the specific dynamic action of protein. Aub and Means conclude that the liver is either not an important regulator of the metabolic rate or is adequate for this purpose even when severely diseased. Furthermore, their studies justify the deduction that either the liver is not the main site of the specific dynamic action of protein or else that it can adequately perform this function even in disease. It is, of course, well known that the thyroid can modify the basal metabolic rate. Even in exophthalmic goiter and cretinism, however, the specific dynamic action of protein is not unusual. The rise in metabolism in such cases is, as Du Bois [3] has shown, merely superimposed on the abnormal basal rate. It is therefore reasonably certain that the thyroid gland also is not the seat of the specific dynamic action.

1. Aub, J. C., and Du Bois, E. F.: The Basal Metabolism of Dwarfs and Legless Men, with Observations on the Specific Dynamic Action of Protein, Arch. Int. Med. **19**: 840 (June) 1917.
2. Aub, J. C., and Means, J. H.: The Basal Metabolism and the Specific Dynamic Action of Protein in Liver Disease, Arch. Int. Med. **28**: 173 (August) 1921.
3. Du Bois, E. F.: Metabolism in Exophthalmic Goiter, Arch. Int. Med. **17**: 915 (June) 1916.

Duties of Health Officers.—Modern sanitary practice places a multiplicity of duties on the health officer. In the larger communities at least, the burden is sufficient to demand all of the time and energies of the health executive if really efficient health service is to be rendered. Unfortunately, to the legitimate activities of a health department are often added duties which, in the light of present knowledge, have little or nothing to do with preventing sickness or decreasing mortality.—*Health News* **15**:303, 1920.

Current Comment

PHYSICAL STANDARDS FOR WORKING CHILDREN

The problem of the regulation of child labor, like many other social and economic questions, takes on broader aspects and relations the more carefully it is studied. The difficult point to determine is, At what age and under what conditions can a child begin to work without endangering his future physical and mental development? Prohibition of the employment of children in certain tasks and the creation of an arbitrary fixed minimum age for entrance into any employment are only partial solutions of the problem. Any permanent and fundamental legislation requires the establishment of standards of physical fitness which all children entering employment should be required to meet. The creation of such standards, in turn, requires the formulation of definite standards of normal development for the use of physicians in examining a child applying for a permit to work. To fill this need, the Children's Bureau appointed a representative committee of physicians to formulate such standards. Their report appears in Bulletin 79 of the Children's Bureau, consisting of general recommendations regarding methods of examination, a standard record sheet of physical examinations for employment, for the use of the examining physician, and an instruction chart for physicians in making such examinations and filling out reports. The bulletin is a preliminary one, and it is expected that from time to time the results of further scientific research and practical experience in this field will be published.

EXPERIMENTAL STUDIES ON TRACHOMA

It is generally known that trachoma is a highly contagious disease and exists endemically in parts of the United States as well as in other parts of the world, but the specific cause of the disease is still unknown. There is no evidence that trachoma is caused by a micro-organism of the bacterial or blastomycetic group. The epithelial inclusions or Prowazek bodies are quite characteristic of trachoma, but do not appear to be the cause of the disease. Trachoma is much more prevalent where the hygienic and sanitary surroundings are bad, and Eaton [1] and others believe that the virus is endogenous and that by far the most potent known means of transmission of trachoma is interhuman contagion. There has been very little definite information concerning the transmission of trachoma by animals and insects, but the recent work of Nicolle and Guénod [2] appears to show that the fly may transmit the disease for a period of twenty-four hours after having been in contact with infective materials. The observations of Nicolle and Guénod give us considerable information concerning the nature and transmission of the virus of trachoma. They find that the infective agent is a filtrable virus, passing the Berkefeld V filter, that it is destroyed by heating to 50 C. for one-half hour, and that it may be preserved in glycerol at icebox temperature for seven days. The chimpanzee, baboon

1. Eaton, F. B.: Am. J. Ophth. **2**: 422 (June) 1920.
2. Nicolle and Guénod: Arch. d. l'Inst. Pasteur de l'Afrique du Nord **1**: 149 (July) 1921.

and rabbit were found to be susceptible to trachoma, but the rat, cat and guinea-pig were not, although the guinea-pig showed some suggestive symptoms. The virus has also survived five successive transfers from rabbit to rabbit, and has been recovered from the eye of a rabbit one year after inoculation. It has also been preserved in the testicle of the rabbit for thirty-seven days. From their earlier observations these investigators believed that animals which had recovered from an attack were immune, but in their more recent work they find that a primary attack of trachoma when it has entirely subsided does not protect the eye of the rabbit or monkey from experimental reinfection. The transmission of the disease to rabbits and the fact that the virus can be preserved in the testicle of the rabbit offer some hope of discovering the cause itself of trachoma and later of obtaining means of prevention, as through serums or vaccines. Since about 50 per cent. of those who have trachoma have disturbances of vision, it is, of course, most important to prevent the disease as far as possible. In addition to isolating those affected with it, the rooms where trachoma patients are kept should be protected from flies by screens and there should be a systematic destruction of flies. Again, the fly has been found to be a possible agent in the transmission of human disease.

VETERINARY CHIROPRACTIC

And now the lower animals are to be "adjusted!" The house organ of a brand of chiropractic dispensed from Davenport, Iowa, prints letters from some of its "graduates" describing wonderful results attained in the "chiropractic treatment" of sick animals. One enthusiastic Georgia chiropractor relates that when he "was adjusting Henry Vinson's son for an incoordination causing pneumonia" that "Mr. Vinson says, 'Doc, I have a mule that is down in the back and can't get up and wish you would come out and see if you can do something for him.'" The versatile chiropractor looked over his new patient and "adjusted the mule between the hip bones." The mule recovered—presumably slowly enough to allow the adjuster to escape. The same practitioner also reports that he "was called to attend Mr. Ben Vandalsem's Scotch Collie who was dragging his hind legs, and after adjusting the dog he improved and got quite normal." A Texas chiropractor records the interesting case of a "cow down, all swelled up, as if she would burst." Diagnosis: "A poisoned condition." Treatment: "I adjust sixth and eighth dorsals and K. P. In two minutes cow was up vomiting. I came back by in one hour, cow seemingly in normal condition." Now, putting the "dorsals and K. P." of a cow in position and adjusting a mule "between the hip bones" may get chiropractors into serious trouble. It is one thing to fool with the health of human beings and an entirely different thing to trifle with the health of live stock. The "patent medicine" interests of the country have been powerful enough to keep off the statute books any law that would protect the public by giving it information regarding the composition of nostrums sold as home remedies. But there are some states which forbid the sale of any live stock remedy that does not bear on the label the names of its active ingredients. Hence it may easily come to pass that if the chiropractors attempt to treat cows and pigs they may find themselves in hot water. That men, ignorant of the body and its processes, should treat the ailments of men, women and children is apparently a small thing; human life is the only thing involved. But that ignoramuses should trifle with the health of a horse or a hog is an outrage; that is property. If chiropractors are wise they will confine their malpractice to humans; it is safer.

BRINGING PRESSURE TO BEAR ON CONGRESSMEN

In the *Congressional Record* for September 6 appear the remarks made by Miss Alice Robertson, member of the House of Representatives from Oklahoma, on the Sheppard-Towner bill. Miss Robertson's public statement regarding this bill has already been published in THE JOURNAL. One point brought out in her remarks, which will be of interest to those who have been engaged in any campaign for legislation, is her statement of the manner in which the endorsement of the measure by women's clubs was secured. She says:

> It is reported that this bill has the endorsement of all the great woman's organizations representing a membership of ten million. I happen to hold memberships in four of these organizations. In my judgment, the membership of these clubs is twice counted, at least 50 per cent. Out of many letters telling me how endorsements of clubs were secured without any real understanding of the legislation involved. I select one at random:
>
> "Hon. ——— ———, member of the legislature, received an urgent telegram to work for this bill from the ——— Woman's Club, 1,400 strong, emphatically for it. Accordingly he 'got busy' with wire and mail to Washington. When he returned to ——— he called together the local ladies and asked for pointers. He was astounded to find that they knew nothing about the bill. 'Then, why did you send me such a telegram?' 'Because Mrs. ——— ——— asked us to do so.' A very wealthy lady's name was mentioned. As she was known to the local ladies as a good woman, they assumed that everything was all right and did as they were bid."

Too often, the efforts made to "bring pressure to bear on the congressman" to pass or defeat various measures are of this kind. Such methods have been used both for and against all kinds of legislation so frequently that they have lost their effectiveness. Congressmen and members of legislatures now regard petitions, letters, telegrams and other formal propaganda methods as evidence of a well financed and energetically directed campaign on the part of a centralized organization rather than as any indication of real sentiment on the part of their constituents. The minutes of both the Senate and the House for every morning session contain resolutions, petitions, telegrams, letters and newspaper extracts introduced by various congressmen as a demonstration to their constituents of their zeal and energy. This mass of material, which every member receives, is about equally divided pro and con, and is introduced into the records, printed without reading, read by title, ordered to lie on the table, or referred to some committee where it is probably pigeonholed indefinitely. The really wise and efficient legislator today analyzes carefully each bill on which he is to vote, and endeavors to learn the sentiment regarding it in his district from individual constituents in whose judgment he has confi-

dence. Like many other features of our social and political lives, conventional forms of propaganda have been so generally and indiscriminately employed that they have lost whatever influence they may have had in legislative circles.

ARIZONA'S OPPORTUNITY

The model bill for the registration of births and deaths has been adopted and is in force in forty-five states. It is only necessary for three more states—Arizona, Nevada and South Dakota—to pass this bill to secure for the nation what it heretofore has not had, namely, complete and uniform registration and tabulation of births and deaths. The need and value of such data, fundamental for legal, social, economic and public health purposes, is too apparent to require argument. Each of the three states named still adheres to the system of county registration, which the experience of years in other states has proved worthless. The county, especially in our Western states, is too large a unit for registration purposes. Small registration districts, with local registrars easily accessible to every community in the state, are necessary in any effective plan of birth and death registration. Vital statistics is one of the few subjects on which uniform legislation is necessary in order to secure figures that are comparable and capable of tabulation. The Arizona legislature meets in November of this year, which gives that state the opportunity to be the forty-sixth state to adopt proved and uniform methods of recording the births and deaths of her citizens. The legislatures of Nevada and South Dakota do not meet until January, 1923.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Hospital News.—Dr. Newton T. Enloe, Jr., has been given a ten-year lease on the Enloe Hospital, Chico, and will at once assume active management of that institution. Dr. Newton T. Enloe, Sr., who wishes to devote his entire time to his practice, will retain his office in the building.

Personal.—Dr. Whalen Morrison has been appointed to succeed his father, the late Dr. Normal W. Morrison, as chief surgeon for the Coast Lines of the Sante Fe Hospital Association. Dr. Morrison will take charge of the association's hospital in Los Angeles and supervise the emergency hospitals at the terminals along the Coast Lines.

District Medical Meeting.—Under the auspices of the Santa Clara County Medical Society, the Fifth District State Medical Society will meet at Gilroy, September 21. Dr. William E. Musgrave, secretary of the state medical society, and also editor of the *California State Journal of Medicine*, has been invited to make an address on the organization, equipment and conduct of modern hospitals, and Dr. Alson S. Kilgore, San Francisco, regional director of the League for the Conservation of Public Health, will speak on the subject of cancer control.

Convention of Railway Surgeons.—The Pacific Association of Railway Surgeons held its nineteenth annual meeting, August 26-27, at San Francisco. The following officers were elected for the ensuing year: president, Dr. S. S. Vogle, Santa Rosa, surgeon of the Northwest Pacific; first vice president, Dr. George R. Carson, San Francisco, surgeon of the South Pacific; second vice president, Dr. George W. Stout, Ukiah, Northwest Pacific; treasurer, Dr. William M. Keys, Alameda, Southern Pacific, and secretary, Dr. William T. Cummins, San Francisco, Southern Pacific. All officers were reelected, except the president. A joint session of the Railway Surgeons and the Saint Francis Hospital Clinical Society was held at which Dr. Martin Fischer, professor of physiology at the University of Cincinnati, delivered a paper on "Arteriosclerosis."

DISTRICT OF COLUMBIA

Appointment to Veterans' Bureau.—The appointment has been announced of Dr. John R. Crossland, St. Joseph, as a special expert in the Veterans' Bureau to look after the interests of the negro veterans entitled to benefits under the relief laws.

President Harding Made a Member of the United States Health Reserves.—For the purpose of raising the standing of the reserve corps and to promote cooperation among all agencies, professional, social and governmental, engaged in helping former service men, there was organized, August 29, the United States Association of the Public Health Reserve Officers, Post No. 1. President Harding was elected an honorary member of the organization, and Surgeon-General Cumming was chosen as honorary chairman; Col. John R. McDill was elected chairman; Bernard C. MacNeil, secretary-treasurer; and Isidore I. Hirschman, corresponding secretary.

FLORIDA

Quarantine Lifted.—The quarantine maintained at Pensacola since June, 1920, was terminated, August 17. Pensacola has been pronounced free from bubonic plague by the federal Public Health Service.

Personal.—Dr. Edgar Estes, chief surgeon of the Flagler Hospital, St. Augustine, has been appointed state chairman for the American Society for the Control of Cancer. A campaign of publicity and education will be carried on throughout Florida during "Cancer Week" in October.

GEORGIA

Appointments on Board of Medical Examiners.—Governor Hardwick, August 30, reappointed Dr. Charles T. Nolan, Marietta, as a member of the state board of medical examiners for a term of four years. Other appointments were Dr. William C. Williams, Cochran, who succeeds Dr. Alexander G. Little, Valdosta, and Dr. Henry G. Maxey, Maxeys, to succeed Dr. Albert Fleming, Waycross.

HAWAII

Venereal Clinic in Honolulu.—According to an announcement from the officers of the Territorial Board of Health, the first campaign against venereal disease was launched, August 1, with the opening of a newly established venereal clinic in Honolulu. The Territorial Legislature appropriated the sum of $15,000 toward the maintenance of such a clinic, which is now being opened under the direction of the board of health, with the cooperation of the U. S. Public Health Service. A special effort will be made to check the spread of venereal disease among children, the prevalence of which has alarmed the health authorities.

ILLINOIS

Personal.—The governor has appointed Dr. Joseph H. Ellingsworth, East Moline, to be superintendent of the state hospital for the insane at Watertown.——Dr. Eugene Cohn, superintendent of the Kankakee State Hospital, has resigned, to become effective, October 15. Dr. William A. Stoker, Centralia, formerly superintendent of the Anna State Hospital, Anna, has been appointed to succeed Dr. Cohn.

Chicago

Chicago Motor Club to Urge Parking Privileges for Physicians.—At a meeting held this week the Chicago Motor Club assumed the initiative in a movement to secure parking privileges for physicians. A proposition will shortly be presented to the councils of the local and state medical societies for their consideration.

IOWA

Iowa Mobilizes Her Welfare Forces.—The twenty-second annual meeting of the Iowa State Conference of Social Work will be held in Creston, Iowa, September 24 to 27. This conference, in addition to the regular program, will include a general discussion on rural and community health problems, participated in by all the various organizations interested in

public welfare. This includes the Iowa State Medical Society, Iowa Tuberculosis Association, the State Red Cross, the State Federation of Woman's Clubs, State Parent-Teachers' Association, W. C. T. U. and American Legion, as well as the various departments of the state government, the state university, and the members of the state legislature. Such a mobilization of the resources and activities of the state for better social and health conditions is a most promising indication of the growing interest of the public in these questions and of the increasing capacity for leadership among physicians.

LOUISIANA

Personal.—Dr. Henry F. Ader has been elected a member of the state legislature from the sixth ward, New Orleans.

Hospital News.—Two campaigns have been launched to obtain large sums of money for the Presbyterian Hospital: $300,000 for an endowment fund to the hospital's charity service and a building fund of $250,000. Mrs. Alexina S. McBurney presented the hospital with twenty-one shares of bank stock as a nucleus for the endowment fund. As soon as the pledges to the building fund total $50,000, a new hospital will be erected.

Health Work in Public Schools.—With the opening of the public schools, September 19, the health work will be greatly improved. Five additional nurses will be added to the department of hygiene, an oculist has been employed, and an additional medical inspector has been appointed who will investigate all contagious diseases, and vaccinate all public school pupils in the schools instead of the office as heretofore. Scales for the weighing and measuring of children in the public schools will be placed in every white school. All pupils from the kindergarten through the fifth grade will be given a complete physical examination, and the nurses will care for the pupils with physical defects that may be corrected.

MARYLAND

Personal.—Dr. R. M. Hakin, a native of Bombay, India, has been appointed resident physician of Sydenham Hospital, Baltimore, by Dr. C. Hampson Jones, health commissioner. Dr. Hakim is a graduate of the University of Maryland and has been on duty at the U. S. Public Health Hospital at Fort McHenry since his graduation. He is now a naturalized citizen of the United States.

U. S. Public Health Hospital to Be Enlarged.—Work on the new $550,000 addition to the Perryville Hospital for disabled soldiers will be started within the next week, and will be carried on continuously until completion. From six to eight months will be required to complete the addition, and hundreds of laborers will be employed. When the enlargement has been erected, provision will have been made for the accommodation of 300 additional disabled men.

Demonstration on Radium at Kelly Hospital.—Members of the American Electrotherapeutic Association, which held its annual convention in Washington, D. C., recently, came to Baltimore, September 6, to attend a clinic on the use of radium in medicine given at the Howard A. Kelly Hospital. The clinic was opened by Dr. Frederick West, who demonstrated the preparation of radium for use in treating cancer. Dr. Curtis F. Burnam read a paper on the use of radium, and showed a number of slides illustrating the factors set forth in the paper. Dr. William Neill, Jr., and Dr. Dudley A. Robnett also made short talks. Dr. Howard A. Kelly was not present, as he is on a vacation in Canada.

Extension Classes for Physicians in Rural Sections.—Health clinics and dispensaries in many communities in the state, in charge of physicians and nurses connected with the University of Maryland Hospital and Medical School, are planned as part of an extension service that the institution will organize this fall. Special courses that out-of-town physicians can attend two or three times a week are already in operation, and the number of these is to be increased and their scope broadened. Most of the work carried on at the proposed dispensaries will be conducted by physicians from the community where they are located and by men who take some of the special courses. They will be acquainted with the nature of the work through the hospital and medical school, thus keeping in touch with the new methods of treatment. The development will naturally be slow. The University of Maryland stands practically alone in its effort to train rural physicians, most other hospitals giving their time to the development of specialists.

MASSACHUSETTS

Memorial Roentgen-Ray Building to Be Erected.—The contract has been awarded for the construction of the Thorndike Memorial Roentgen-Ray Building, for the city of Boston, at a cost of $313,000.

Personal.—Dr. Francis O'Brien has been appointed superintendent of the Hampshire County Sanatorium at Leeds, to succeed Dr. Charles E. Perry, who resigned recently to take charge of a government tuberculosis hospital in California. ——Dr. Sumner H. Remick, resident physician and superintendent of the Sassaquin Sanatorium, New Bedford, has been appointed by Commissioner Kelly as director of the division of tuberculosis sanatoriums, to succeed the late Dr. William J. Gallivan, South Boston.

The Professional Building.—The Hotel Tuileries, Boston, has been purchased by the Professional Trust Corporation and after extensive alterations the building will be opened, about October 1, for the exclusive use of physicians, and will be known as the "Professional Building." The large hotel ballroom will be retained and used as a general reception room and club room for the occupants. The other rooms in the hotel will be altered to make them suitable for the use of physicians. The building is six stories high and is of fireproof construction.

Courses in Health Education.—The Harvard-Technology School of Public Health, in cooperation with the Graduate School of Education of Harvard University, Boston, is organizing a special course in health education for teachers, school nurses, directors of physical education and public health workers. The object of this course of study is to provide the professional training necessary to teach or direct the hygiene instruction in the public schools and to correlate the various health activities of the public school system in the most advantageous way. The course provides a thorough background for health work in the public schools.

MICHIGAN

New Medical Director for Blodgett Hospital.—It has been announced that, about October 1, Dr. Merrill Wells, medical director and superintendent of the hospital, will resign to resume active practice in Grand Rapids. Dr. Claude W. Munger, at present superintendent of Columbia Hospital, Milwaukee, will take his place. Dr. Munger is president of the Milwaukee Hospital Council, and secretary of the Wisconsin Hospital Association.

Campaign Against Malnutrition.—The surveys of last spring having disclosed that 10,000 schoolchildren of Detroit are more than 15 per cent. below average weight, the city council appropriated $20,000 to combat the situation, the expenditure of which sum has been entrusted to the department of health. It is planned to have all pupils weighed and measured during September, and those children who are 15 per cent. or more under weight will be given a complete physical examination by the medical inspector of the health department. Children who are free from impairing defects which might be responsible for the underweight will be eligible for nutrition classes, which will be formed in each school. Those who possess the more severe impairing defects of nose, throat, eyes, thyroid and teeth will be advised of their condition and urged to have the defects corrected. A director of nutrition has been secured to supervise the work of these classes.

Typhoid Fever.—An outbreak of typhoid at Camp Roosevelt, near Muskegon, alleged to be due to a typhoid carrier, closed the camp to all new entrants, August 1. Seventeen cases at Otsego were thought to have been caused by a contaminated well. Nearly 400 residents of the village and 3,000 at Cadillac, where three deaths from typhoid fever occurred, were vaccinated against typhoid at clinics established by the state health department. In Detroit, where fatalities also occurred, the number of cases exceeded 100, and houses where the disease was present were placarded, and residents were urged to be vaccinated. According to a report of the health commissioner of Detroit, August 27, the number of cases of typhoid fever for that week declined from sixty to thirty-seven. An investigation showed that apparently the infection was obtained while bathing in the river. There are quite a number of contact cases showing that people are careless about being immunized against this disease, and are not taking the other necessary precautions to avoid infection.

MINNESOTA

State Medical Meeting.—The fifty-third annual meeting of the Minnesota State Medical Association was held, August 24-26, at Duluth, under the presidency of Dr. Charles Eugene Riggs, St. Paul. The election of officers resulted in the selection of Dr. James Frank Corbett, University of Minnesota, as president for the ensuing year; Dr. Samuel H. Boyer, Duluth, was reelected as first vice president; Dr. Charles E. Ide, Brainerd, second vice president; Dr. Thomas Williams, Lake Crystal, third vice president; Dr. Carl B. Drake, St. Paul, secretary, and Dr. Frederick L. Beckley, St. Paul, treasurer.

NEW YORK

Poliomyelitis.—There have been reported to the New York State Health Department from July 1 to September 9 a total of 241 cases of infantile paralysis, with twenty-one deaths. This number the health department believes does not represent all the deaths from this cause. During the same period in New York City seventy-eight cases were reported, making a total of 419 cases. Fifty-eight cases have been reported from Utica.

Health Conference.—The annual conference of sanitary officers and public health nurses of New York State was held at Cornell University, Ithaca, September 13-15, under the auspices of the state department of health. Dr. Hugh Cumming, surgeon-general of the U. S. Public Health Service, represented the federal government, and Miss Ella Phillips Crandall the National Organization for Public Health Nurses. The American Social Hygiene Association was represented by its executive secretary, Dr. William F. Snow, and the State Institute for the Study of Malignant Disease, by its director, Dr. Harvey Gaylord. Among the newer subjects discussed were "The Treatment of Hay-Fever and Asthma by Vaccines," by Dr. Albert Vander Veer, Jr., New York City, and "The Functions of Permanent Diagnostic Clinics," by Dr. Moses Mandelbaum, New York City Diagnostic Clinic.

New York City

Fifth Avenue Hospital Near Completion.—The new Fifth Avenue Hospital at One Hundred and Fifth and One Hundred and Sixth streets is progressing rapidly toward completion. Of a total of $3,000,000 for the building fund, only $750,000 remains to be subscribed. An endowment fund of $1,000,000 has been provided which will insure maintenance after completion. The Fifth Avenue Hospital will be the first wardless hospital in the world, and is designed especially for persons who have not enough money to pay for private care and who do not desire to accept charity. There will, however, be provision for charity patients, the rates being based on the patient's ability to pay.

Society for Cinematographic Instruction.—This society, which has devoted the last eighteen months to experimental work at hospitals and laboratories in order definitely to ascertain the applicability of the motion picture to the study of medicine, surgery and dentistry, has established the fact that it is possible to record accurately and permanently every detail of any minor or major operation, and to portray in the most vivid manner every step in an operation. It is the intention of the society to work out various courses of study by means of cinematography, and to establish a central cinematograph library in New York City. This library will be equipped for private and group study, while members and institutions at a distance may either rent or purchase, at a nominal charge, duplicate copies of any of the subjects contained in the main library, and in this manner it will be possible to witness the work of the ablest men in the profession both in this country and abroad. At the present time the society is negotiating an exchange arrangement with the profession in Germany and other European countries. Any physician, surgeon or dentist in good standing is eligible for membership in the society. Monthly meetings will be held at which will be shown the latest work of the regular courses; and research work, together with further experiments in microcinematography, analysis of motion and natural color, will be pursued continuously.

OHIO

Personal.—Dr. John Oliver has resigned as professor of surgery in the University of Cincinnati College of Medicine, and head of the combined surgeons' service of general hospitals.——Dr. Nelson H. Young, formerly assistant superintendent, Toledo State Hospital, has been appointed senior physician at the National Sanatorium for Veterans of the World War at Marion.

Hospital News.—A former resident has recently offered to erect a $50,000 hospital in Lebanon, on condition that the commissioner or county equip it and agree to maintain the annual deficiency in operation. The Warren County physicians heartily endorsed the project of establishing a county hospital.——Several counties in Ohio are planning to build their own hospitals for tuberculous patients under the provision of the Jones law, which became effective, August 15. This law provides that commissioners of any county having more than 50,000 population may, with the consent of the state department of health, provide funds for purchase or leases of sites of buildings for that purpose. The law also provides that any municipality that cannot maintain its hospital may continue it, or lease or sell it to the county. Counties may still build joint district hospitals as provided by the law. Mahony County has planned to build a new hospital to cost approximately $175,000. Trumbell, Stark, Belmont and Columbia counties are also considering the building of hospitals.

OREGON

Enlargement of University Dispensary.—According to an announcement by Dr. Richard B. Dillehunt, dean of the medical school, Portland, the free dispensary connected with the university will be enlarged to twice its capacity and will enable the handling of from sixty to seventy patients daily. The work is conducted to furnish practical experience for the advanced students, who work under the supervision of competent instructors. The medical school opens, October 1, when the requirements for entrance will be raised to three years regular college or university work instead of two years as formerly.

University of Oregon Medical School.—Actual construction on the $225,000 wing of the medical school has begun, and the new building will be ready for the opening of the school year in the fall of 1922, and will more than double the present capacity of the school. The building has been made possible by a gift from the Rockefeller Foundation fund, matched by a state appropriation. In addition, the Rockefeller Foundation has donated $50,000 for the equipment. With the present accommodation it has been necessary to restrict the entrance enrolment to seventy beginning students, and the entire student body to 155. With the completion of the new building, the school can care for at least 350 students.

PENNSYLVANIA

Personal.—Dr. J. Walter Bancroft, secretary of the Cambria County Medical Society, as a result of a recent automobile accident, is a patient in the Memorial Hospital, Johnstown, suffering from a fractured left humerus.

Hospital News.—The Chambersburg Hospital building is being enlarged by the erection of a commodious two-story wing to the east side of the present structure.——The contract has been awarded for the erection of a hospital building at Waynesboro.

Physicians Examine Pupils.—Plans to carry through the most systematic medical inspection of pupils in the history of the state department of health are being put into operation this week. In nearly 900 districts of the fourth class, which include the rural schools, physicians are examining the pupils. In the districts of the higher classes, including the cities and larger boroughs, local officials are directing the work.

Philadelphia

Personal.—Dr. James M. Anders has been elected president of the American Therapeutic Society for the ensuing year. Dr. Anders was also recently elected president of the American College of Physicians.

Assistant Supervisor Named for Defectives.—The board of education has authorized the procuring of an assistant supervisor whose duty it shall be to have active charge of the school pupils who are being retarded in their school work because they are suffering with defects of vision, hearing and locution.

RHODE ISLAND

Report of the Commission on Milk Supply.—The commission appointed by the mayor to inquire into the quality, price, delivery and pasteurization of milk sold in the city of Newport finds that the milk supply comes entirely from farms in Newport County, and the regulations permit but two grades —Grade A, which is pasteurized, and Grade B, which comes

from farms where the cleanliness of the farm and the cleanliness of the herds are certified to by the proper authorities—and that this system is a wise and necessary safeguard to public health. The commission recommends:

That legislation be enacted to provide for the maintenance of but one central slaughter house on the island, this house to be licensed, and that the slaughterers be licensed.

That no cattle shall be slaughtered unless under the direction of a competent inspector to be elected by the town council in the town where the slaughter house is to be maintained, and that said inspector shall receive fees to be determined by the town council as his remuneration. That no cattle or other animal infected with tuberculosis or other disease shall be slaughtered and the product sold for human consumption.

That the present state law be amended to provide against the importation of tuberculous cattle into this state and that adequate appropriations be made annually by the state for the inspection and destruction of tuberculous cattle.

That the present state law be amended to change the standard so that the butter fat in milk will be 3.25 per cent. and the total solids 11.75 per cent.

That at least one infant welfare station be established and operated under the direction of the board of health.

That the labels on all milk containers delivered to dealers and consumers be stamped in such a way as to indicate when said containers were filled.

That the inspector of milk be authorized to advertise at least four times in each month his analyses of the milk sold by the local dairy companies.

That the excess of skimmed milk be placed in the hands of some responsible organization or organizations recommended and approved by the board of health, and be distributed to consumers at a nominal price.

That some method be employed to reduce the number of bottles annually lost or destroyed by customers. An effective method would result in considerable economy in overhead expenses of the plant which should eventually prove to be a factor in the consideration of the cost of milk.

TEXAS

Baptist Sanatorium Dedication.—The Southern Baptists dedicated their new sanatorium for the treatment of tuberculosis, at El Paso, September 11. More than half a million dollars has already been invested in the sanatorium, which is new and modern in every respect, and more will be available later for the institution. Dr. Clarence W. Coutant, formerly with the U. S. Public Health Service, Fort Bayard, N. M., is medical director, and Dr. J. D. Riley, assistant medical director. Dr. John A. Standring will be retained as consultant.

VIRGINIA

Recent Appointments on State Boards.—Governor Davis, August 29, announced the following appointments: Dr. Edward McGuire, Richmond, and Dr. Harry T. Marshall, Charlottesville, both reappointed to the state board of health for the term of four years; Dr. Hugh J. Hagen, Roanoke, appointed to the state board of health; Dr. C. D. Fox, Roanoke, appointed member of the state board of pharmacy for a term of five years.

Tuberculosis Clinic.—At the clinic held, September 5-10, at Petersburg, under the auspices of the Tuberculosis Association of Virginia, the state board of health and the health department of Petersburg, Drs. Everett E. Watson, Mount Regis Sanatorium, Salem; Thomas N. Davis, Lynchburg; Charles Lydon Harrell, Norfolk; Gerald Ezekiel, Richmond, and Walter B. Martin, Norfolk, will examine all persons who apply in regard to their condition so far as it relates to the lungs, heart, tonsils, teeth and adenoids, free of charge.

CANADA

Roentgen-Ray News.—Frederick W. Classens, instructor in biology at the Western University, Canada, claims to have perfected a roentgen-ray machine that will cost $100, against $3,000 or $4,000, the present cost of machines.

Personal.—Dr. Frederick Ball, retired physician and brother of Willard D. Ball, mayor of Ontario, lost his right eye as a result of the accidental breaking of his glasses. The broken glass inflicted a cut in the eye. Dr. Ball was taken to the San Antonio Hospital, Upland, Calif., where the injured eye was removed.

Scarcity of "Subs."—Addressing the Canadian Embalmers' Association at Toronto, recently, John D. McNurrich, professor of anatomy, spoke of the scarcity of bodies for dissecting purposes of the university. He had found prohibition one of the main reasons for this, as men who would have ordinarily died destitute were now buried by their estates.

Public Health News.—Dr. Charles Hastings, M. O. H., Toronto, has quieted the misgivings of citizens by reporting that the so-called epidemic of summer influenza is nothing more than ordinary cases of colds, bronchitis, etc., which are not reportable.——Dr. Theodore A. Lomer, M. O. H., Ottawa, in an address before the Canadian Sanitary Association, advocated new and more strict methods of disinfecting houses after disease, claiming that the present methods are spreaders of contagion and originators of epidemics.——In an address before the Canadian Embalmers' Association at Toronto, Dr. John W. S. McCullough, chief officer of health for Ontario, eulogized the work of funeral directors by cooperating with the health department in the care taken with the bodies of persons dying with contagious diseases.——At their annual convention at Ottawa, the Canadian Sanitary Association decided to change the name of that association to the Sanitary Inspectors' Association of Canada, and to limit membership to sanitary inspectors. Dr. J. A. Beland, Shawenegan Falls, Quebec, was elected vice president, and Drs. John W. S. McCullough, Charles A. Hodgetts, Theodore A. Lomer, John A. Amyot, R. S. Parent, James S. Nelson, and Robert Law, were chosen as honorary members.

Quackery in the Province of Quebec.—In recent numbers of the *Bulletin Médical* of Quebec, Dr. J. Gauvreau has commented on the extent of quackery in that province. He blames present conditions on the credulity of the public and the fact that physicians do not take action, especially as regards the education of the public. He insists that the only solution of the matter is fighting ignorance with science, showing up the quacks. The greatest obstacle found in the campaign against quacks is the present law on patent medicines. This enables quacks to state in their advertising matter that while not legally authorized to practice medicine they have patent medicines of known curative value. On account of this law persons who have been sentenced several times for illegal practice of medicine have been able to establish firms for the sale of patent medicine on a large scale. Dr. Gauvreau blames the passage of the present Canadian law on the pressure exerted by patent medicine manufacturers. As a remedy he advises the creation of a bureau which will have charge of censoring medical advertising both in posters and in journals. He considers that these abuses will disappear only when the medical profession will be able to keep within bounds the yellow press so far as medical advertising is concerned.

GENERAL

Personal.—Dr. F. Calderón of Manila was given a reception and banquet recently on the occasion of his leaving the Philippines for a trip to the United States. Dr. Plácido de Guzman and Dr. J. Juliano also left for this country at the same time, and Dr. L. Ordóñez for Europe.

National Health Council.—The admission of the American Society for the Control of Cancer into the National Health Council has been announced by the council. Application for, or inquiry on membership has also been received from the following additional organizations: the National Committee for the Prevention of Blindness, the American Association of Physicians and Surgeons in Industry, the Conference Board of Physicians in Industry, the American Conference for Hospital Service and the National Drainage Congress.

National Medical Association.—The twenty-third annual session of the National Medical Association, consisting of negro physicians, surgeons, dentists and pharmacists, was held, August 23-26, at Louisville, Ky., under the presidency of Dr. John P. Turner, Philadelphia. The officers who were elected for the coming year are: Dr. Henry M. Green, Knoxville, president; Dr. John Perry, Kansas City, president-elect; Dr. Walter G. Alexander, Orange, N. J., general secretary; Dr. John Levy, Fresna, S. C., treasurer, and Dr. George E. Cannon, Jersey City, chairman of the executive board. The next meeting will be held in Washington, D. C., on the fourth Tuesday in August, 1922.

Second International Congress of Eugenics.—Major Leonard Darwin, president of the Eugenics Education Society of Great Britain, and a son of Charles Darwin, will deliver the opening address on the history of the eugenics movement, at the Second International Congress of Eugenics, to be held, September 22-28, at New York. The leading address in Section I—Human and Comparative Heredity—will be given by Lucien Cuénot, Nancy, France. In Section II—Eugenics in the Human Family—Dr. Herman B. Lundborg, University of Upsala, Sweden, will deliver the principal address. Dr. Lundborg, in conducting an investigation similar to that made by Dugdale of "The Jukes," examined the records of several thousand individuals of a Swedish family of unfortunate heredity extending over a period of 200 years. Georges Vacher de Lapouge, Poitiers, France, author of "The Funda-

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mental Laws of Anthroposociology," "The Social Rôle of the Aryan," and other noteworthy volumes, will present the leading address in Section III—Human Racial Differences.

American Pharmaceutical Association.—At the recent national convention of the association held in New Orleans under the presidency of Charles H. Packard, Boston, scrupulous observation of national and local prohibition laws was urged. Other measures recommended were the reorganization of the Pharmaceutical Association and the establishing of a permanent home in the central part of the country; adoption of the metric system of weights and measures, and increased activity in the matter of research work. A considerable sum was subscribed to increase the endowment of the association's college. The Louisiana State Pharmaceutical Association, the National Association of Boards of Pharmacy, and the American Conference of Pharmaceutical Faculties, held meetings in connection with the National Association. The officers elected by the American Conference of Pharmaceutical Faculties for the ensuing year are: president, Dean C. A. Dye, Columbus University, Ohio; vice president, E. F. Kelley, University of Maryland; executive secretary (reelected), Rufus A. Lyman, Lincoln, Neb., and general secretary (reelected), Dean J. A. Bradley, Massachusetts College of Pharmacy.

National Safety Congress.—The tenth annual congress of the National Safety Council will be held at Boston the last week in September. The National Association of Industrial Physicians and Surgeons—of which Dr. Charles E. Ford, General Chemical Company, New York City, is president—will hold three joint meetings with the health service section of the Safety Council, and one general session on health and sanitation with the health service and women in industry sections, September 29-30. Among the speakers appearing on these programs are: Dr. Paul White, Massachusetts General Hospital, Boston, who will speak on "The Problem of Heart Disease in the Industrial Worker"; Dr. Royd R. Sayers, chief surgeon, U. S. Bureau of Mines, Washington, D. C., whose subject, "Transportation of the Injured," will be illustrated with slides; "Discussion of the Harm Done by Dusts in the Air" (with demonstration of new apparatus for estimating atmospheric dust), by Drs. Cecil Drinker and Philip Drinker, Harvard Medical School, Boston; Brig.-Gen. Charles E. Sawyer, Washington, D. C., will discuss the "Health of Industrial Workers and the Public Welfare," and Dr. Donald B. Armstrong, director, the Community Health and Tuberculosis Demonstration of the National Tuberculosis Association, Framingham, Mass., "What Has Been Done for the Health of the Industrial Worker in Framingham."

Senate Committee Makes Recommendations on Care of Disabled.—The expenditure of $16,400,000 by Congress for the construction of new hospitals and additions to present hospital facilities will be recommended by the Senate Committee investigating care of disabled ex-service men. This committee was appointed through a resolution introduced by Senator Walsh of Massachusetts in the Senate and it is composed of Senator Sutherland, West Virginia; Senator Calder, New York; Senator Weller, Maryland; Senator Walsh, Massachusetts, and Senator Pomerene, Ohio. In addition to the recommendation of this appropriation by Congress many other plans are advanced: that the further use of war camps for the temporary housing of disabled soldiers be discontinued; that the President be authorized to transfer to the Veterans' Bureau the operation, management and control of any government hospital; that there should be established in each of the fourteen regional offices of the Veterans' Bureau a board for the investigation of complaints, this board to consist of one representative of the Bureau who is not a doctor, one ex-service man and a doctor who is not an employee of the United States Government; that there should be established an inspection service to inspect all hospitals at regular intervals; that there should be established additional training centers for mental and tuberculous cases. The committee in its report also declared that too much attention was given to the medical evidence submitted in the cases of disabled service men. The recommendations for the expenditure of $16,400,000 were made as a result of testimony before the committee hearings given by Dr. W. C. White, Pittsburg, chairman of the Hospitalization Committee appointed by Secretary of Treasury Mellon to decide on the sites where all appropriations for hospitalization should be expended. The other members of this committee were Dr. Frank Billings of Chicago, Mr. John G. Bowman of Pittsburg and Dr. George H. Kirby of New York.

LATIN AMERICA

Tuberculosis Conference in Argentina.—The *Prensa Médica* announces that the Third National Conference on Antituberculosis Prophylaxis is to convene at La Plata in October.

Library Donated by a Physician.—Dr. M. Bango y León, former professor of clinical surgery of the University of Havana, and superintendent of the Sanatorio Covadonga, has donated his professional library to the National Library of Cuba.

Personal.—The director of the Bahia medical school has obtained from the Brazilian government an appropriation for two years of study in the United States by the assistant professor of hygiene.——The *Semana Médica* states that Dr. Israel Castellanos of Havana has been appoined director of the Identification Bureau of Cuba.

Election of Officers.—The *Revista de Medicina Militar* states that at the recent election of officers of the Bahia Medical Society, Dr. A. Pacifico Pereira was elected honorary president; Dr. L. Pinto de Carvalho, president; Dr. Caio Ferreiro de Moura and Dr. J. Coelho Moreira, vice presidents, and Dr. E. Diniz Gonçalves, secretary general.

Mexican Typhus Congress.—The Second National Tabardillo Congress is to convene at Mexico City, Dec. 25-31, 1921. The committee of organization is Dr. Pruneda, president; Dr. R. E. Cicero, 2a de las Moras 34, secretary general; and Dr. A. Brioso Vasconcelos, recording secretary. The vice presidents are Dr. H. Rubio of Pachuca and Dr. G. Escalona.

Güemes' Retirement.—As already mentioned, Prof. L. Güemes recently resigned the chair of clinical medicine at the University of Buenos Aires. He was given an ovation on his retirement and was presented with a testimonial. The salary that was paid him during the vacation period, followed by his resignation, he declined to accept, and the university authorities turned it over to a charitable organization.

Training School for Nurses at Rio de Janeiro.—The National Public Health Service of Brazil has founded at Rio a training school for nurses of both sexes, in charge of Dr. M. de Abreu. There is already a training school there for attendants to serve in the colony for the insane, besides the training school for nurses connected with the Hospital Nacional and in charge of Prof. Juliano Moreira, who is director general of the official care for the insane.

Hygiene Journal Reappears.—The *Revista de Higiene* of Bogotá, the organ of the Public Health Bureau of Colombia has resumed publication after an interval of over a year. The editors are Drs. P. Garcia Medina, M. N. Lobo, P. J Barón, director, assistant director and secretary, respectively, of the National Department of Health. The first number gives much space to the work that is being conducted in Colombia in cooperation with the International Health Board of the Rockefeller Foundation.

Medical Education in the United States.—In a recent number of the *Boletim da Sociedade de Medicina e Cirurgia de S. Paulo* there appears the address delivered by Dr. D. de Paula Souza before the Medical Society of S. Paulo comparing medical teaching in Brazil and the United States. He mentions the work accomplished by the American Medical Association, Carnegie Institute and the General Education Board for the improvement of medical education, in reducing the number of medical schools. Among physicians he met in this country, he praised very highly Dr. W. H. Welch of Baltimore, whom he calls the man with the highest medical culture in the United States.

FOREIGN

Personal.—Dr. J. M. Albiñana Sanz of Madrid has been officially appointed by the government of Spain on a historical mission to Mexico. He is to study the primitive medicine of the Aztecs and its influence on modern European medicine.

Training School for Nurses in Roumania.—An Italian exchange, *Pediatria*, mentions the arrival in Roumania of a delegation of eight nurses sent by the Canadian Red Cross to inaugurate a school for nurses. The delegation is in charge of Miss D. Cotton.

International Congress for Psychical Research.—The *Ugeskrift for Læger* reports that a number of foreign research workers presented communications at this congress which was held recently at Copenhagen, August 26 to September 2. The address of the secretary is Graabrødretorv 7.

Social Hygiene in Poland.—The Association of Social Hygiene of Poland, in its campaign against prostitution and venereal disease, has called its second meeting for October 30-31, to be held in Warsaw. The session will be in four sections, on: (1) eugenics; (2) sexual and eugenical education; (3) battle against venereal diseases, and (4) legosocial.

Anniversary of Foundation of Barcelona Academy of Medicine.—This institution celebrated recently with much ceremony the one hundred and fiftieth anniversary of its foundation. The leading address by Martinez Vargas, dean of the medical department of the University of Barcelona, was a historical sketch of medicine and of health legislation in Spain and the plan for a ministry of health as a government department.

Fiftieth Anniversary of the Birth of Schaudinn.—September 19 marks the fiftieth anniversary of the birth of Fritz Schaudinn, the discoverer of *Spirochaeta pallida*. As stated by Garrison, Schaudinn's discovery of this almost invisible parasite was due to his incomparable skill in technic and staining methods. Without question, his discovery was one of the most important advances necessary to the conquest of syphilis.

Spanish Surgeon Distinguishes Himself.—Spanish newspapers are praising the conduct of Dr. Pedro González Rodriguez, a naval surgeon, during recent fighting in Morocco. While his ship, *Cataluña*, was engaging the Moorish positions, a large number of Moroccans were wounded. Dr. González Rodriguez asked permission to attend the wounded which he did in full view of the Moors, who, in appreciation of his humanitarian efforts, ceased firing. After rendering aid the doctor returned on board accompanied by the men whose lives he had probably saved.

International Anthropology Institute.—The first session was held recently at Liége, with Prince Bonaparte in the chair. The representatives of eighteen nations mapped out a concerted program for research, the whole under the direction of the international committee appointed, and the French subcommittee which has its headquarters in the School of Anthropology at Paris. The conference lasted ten days, and the *Paris médical* comments on the unusual coordination realized for a vast network of research workers to unite the different countries around the world.

Prison Term for Exaggerated Advertising of Nostrum in France.—The *Paris médical* relates that a chemist and a pharmacist were recently condemned by the Seine court to one month in prison and a fine of 5,000 francs on account of their advertising of Toxicurol, which they claimed would radically cure tuberculosis and with less expense than any other treatment. The testimony of experts was to the effect that the remedy in question was a typical nostrum, but the court did not enter into the question of obtaining money under false pretenses and merely imposed the highest penalty for illegal practice of medicine. Our exchange comments that the law should be amplified to permit prosecution for obtaining money under false pretenses in such cases, as the persons who believe the assurances of a prompt and complete cure under the remedy are losing valuable time when they might be getting effectual treatment. It is a more serious matter than the mere illegal practice of medicine. The suit in 1912 against the Electric Belt Company, in which two physicians who were in the employ of the company were involved, resulted in prison terms of from six months to two years for all concerned, as mentioned in THE JOURNAL at the time.

Deaths in Other Countries

Dr. **E. I. A. Kinnvall** of Stockholm.——Dr. **M. Chotzen,** lector for sexual hygiene and sexual pedagogics at the University of Breslau, aged 63.——Dr. **F. I. Duos** and Dr. **F. M. Guedes de Miranda,** both of Rio de Janeiro. —— Dr. **F. J. Xavier** of S. Paulo.——Dr. **M. Rossan Torres** of Porto Alegre, aged 70.——Dr. **Alice Maeffer Hardegger** of Santa Cruz, the first woman physician graduated from the Porto Alegre medical school. —— Dr. **A. Vieira de Resende** of Rio de Janeiro, at an advanced age. —— Dr. **U. Paiva** of Franca, Brazil. —— Dr. **Chandelon,** professor of toxicology at the University of Liége.——Dr. **F. T. Courel** of Tucumán.—— Dr. **P. Trovati** and Dr. **E. Cornelli** of Rome died from the effects of an automobile accident.——Dr. **E. Prosperi,** also of Rome, succumbed to streptococcus infection from a scratch during a venesection.——Dr. **T. Moretti** of Castiglione, killed in a runaway accident.——Dr. **U. Ferralis-Biddau** of Sassari, Italy.——Dr. **J. Martinez Sáenz** of Corrientes, Argentina, aged 71.

Government Services

Hospital Ships to Be Commanded by Line Officers

As a result of the recent ruling of the Judge Advocate-General of the Navy in the general court martial case of Lieutenant-Commander George to the effect that Commander Garton, an officer of the Medical Corps of the Navy and commander of the U. S. Hospital Ship *Mercy* did not have authority under the law to issue an order to Lieutenant-Commander George, an officer of the line in the Naval Reserve Force, a revision of the Navy regulations in regard to hospital ships has been effected. The change provides that naval medical officers shall no longer be placed in command of hospital ships, and that officers of the line in the future shall be named as commanding officers. Following this revision of the regulations, Capt. Thomas L. Johnson was ordered to the U. S. Hospital Ship *Relief* and placed in command. Captain Johnson is a line officer and the first of his status to command such a vessel since Roosevelt approved of the assignment of Medical Director Stokes to such a duty. The custom of placing medical officers of the Navy has been in vogue ever since the administration of President Roosevelt, when quite a controversy prevailed, the line officers of the Navy vehemently opposing the policy established at that time. Rear Admiral Willard H. Brownson, commanding the fleet of which a hospital vessel was a part, showed such antagonism to the policy that he was relieved of his command by the President. Since that time medical officers always have been designated to such commands, the under-officers having to do with handling the ship being selected from the merchant marine. In this way a conflict with naval regulations and the federal statutes, which inhibit the exercise of command by a staff officer, which includes medical officer, over a line officer, was obviated. It has been necessary, however, for some time for officers of the Naval Reserve to be assigned to these ships, and the case of Lieutenant Barton was an instance in which one of these officers of the line decided to test the regulations by refusing to obey an order from a medical officer in command. The result of this test was the decision of the Judge Advocate of the Navy in his favor and the change of policy which has just gone into effect.

Positions in Navy for Army Interns

Interns completing their courses in regular army hospitals this year will be offered commissions in the navy instead of the army, according to an announcement made by Surgeon General Ireland. These interns, who graduated from authorized medical schools and went into the army hospitals on the promise that they would receive commissions in the medical corps at the completion of their courses, were confronted with the proposition of losing their commissions because of the reduction made in the army by Congress. Through Rear Admiral Stitt, Surgeon General of the Navy, arrangements were made to take these interns into the navy, giving them a commissioned rank. This arrangement applies only to interns graduating this year.

Investigators Report to Veterans' Bureau

Operations of investigators sent out by the Veterans' Bureau to conduct investigations into the condition of disabled ex-service men throughout the country have resulted in the discovery that thousands of former soldiers are in need of medical and financial assistance from the government. More than 10,000 cases have been examined and completed by these investigators. The investigators in the form of squads operating in Des Moines, Iowa, found over 200 veterans needing assistance, and in Davenport, Iowa, 212 cases were reported. Two hundred and fifty men were examined at Canton, Miss., in one day, and operations at Camden, N. J., resulting in the passing on 300 cases; at Jackson, Miss., between 300 and 400 cases, and at Yazoo, Miss., 175 cases.

Public Health Service Institutes

In view of the great success of the institute of the Public Health Service held in Washington, D. C., last December, and of the difficulty, owing to the conflicting dates of other meetings, of arranging for another on the same scale this fall or winter, the service some time ago decided to try to meet the insistent nation-wide demand by arranging a series of institutes to be held in the larger widely scattered cities

of the United States. Locations and dates were so arranged that at least two or three of the meetings should be held within reasonably convenient reach of nearly every resident of the country, and a tentative schedule of courses and of speakers was mapped out. The plans were promptly adopted by many cities, with some variations to meet special local needs.

Cities and dates so far listed are: Hot Springs, Ark., some date in November; New Orleans, January 9-14; Columbia, S. C., January 9-14; Dallas, Texas, and Birmingham, Ala., January 16-21; Memphis, Tenn., January 23-28; Louisville, Ky., January 30 to February 4; Indianapolis, February 13-18; Pittsburgh, February 20-25; Cleveland, February 27 to March 4; Lansing, Mich., March 6-11; Chicago, March 13-18; Minneapolis, March 20-25; Portland, Ore., and Kansas City, Kan., April 10-15; Spokane, Wash., and Newark, N. J., April 17-22; Helena, Mont., and Albany, N. Y., April 24-29; Denver, May 1-6; Washington, D. C., in late May. Some dates in the schedule remain vacant, and these are being rapidly allotted.

The institutes were planned to run for a week, and this length has been almost universally adopted. The basic courses include from three to six lectures on tuberculosis, child hygiene, nutrition, clinics and health centers, communicable diseases, noncommunicable diseases, industrial hygiene, sanitary engineering, administrative problems, mental hygiene, medical social work, syphilis, gonorrhea, protective social work, and the delinquent. Single lectures will also be given on special occasions. Two institutes, those at Hot Springs and Chicago, will be devoted especially to venereal diseases.

The list of lecturers who will speak at some or all of the gatherings include Drs. Frederick R. Green, John H. Stokes, A. J. McLaughlin, William C. White, Valeria Parker, W. F. Snow, W. A. Evans and M. J. Rosenau.

Army Reserve Officers to Retire from Active Duty

All reserve officers of the Medical Corps of the Army now on active duty will be relieved within the next month, according to information given out by the Surgeon General of the Army. The release of these medical officers from active duty is due to the reduction in the strength of the army by congress, which necessitates a similar decrease in the size of the commissioned personnel of the Medical Corps. The original plan of the Surgeon General was to continue these reserve officers on active duty, using them to care for disabled ex-service men confined to army hospitals, but it has been found that the regular army medical corps is sufficient to assume these duties.

Additional Hospitals at Soldiers' Homes

The Secretary of Treasury has announced that bids will be taken next month for the construction of additional hospitals at the Soldiers' Home in Milwaukee; Dayton, Ohio; Leavenworth, Kan., and at the Marion National Sanatorium at Marion, Ind., for the care of tuberculous and neuropsychiatric war veterans. The proposed expansion of these institutions will provide accommodations for 1,000 additional patients, and will cost approximately $3,000,000. Recommendations for the expenditure of money appropriated by Congress for hospitalization at these sites were made through the Hospitalization Committee, headed by Dr. W. C. White of Pittsburgh.

Technical Courses for Army Medical Officers

Surgeon General Ireland of the Medical Corps is planning to send twenty officers of the Medical Corps of the Regular Army to various medical schools and colleges of the country to take special courses in technical studies. Last year a smaller number of officers were assigned to private study, but Congress recently changed the law increasing the number. The names of the officers will be announced later this month. They will receive their orders in time to begin the regular fall curriculum.

MEDICAL OFFICERS, UNITED STATES NAVY, RELIEVED FROM ACTIVE DUTY

CALIFORNIA
Los Angeles—Lowell, C. H.
San Francisco—Visalli, J.

ILLINOIS
Pecatonica—Ives, W. C.

MASSACHUSETTS
Boston—Regan, J. J.

MISSISSIPPI
Meridian—Arnold, H. L.

NEW YORK
New York—Iden, B. F.
Syracuse—Glismann, M. B.

VERMONT
Rutland—Gebhardt, F. H.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 22, 1921.

The Increase of Cancer

The continuous increase of cancer in civilized countries is unfortunately too well attested. It is exemplified in the recent report of the health officer for Edinburgh, Dr. Maxwell Williamson. The latest figures of cancer mortality are the highest ever recorded in Edinburgh. During the last twenty-three years the number of deaths in Edinburgh due to this disease has increased from 267 to nearly double this figure —471. All the deaths due to tuberculosis, including lungs, bones, bowels, etc., amounted to only 417. The commonest site of cancer seems to be the bowel, which, according to Dr. Williamson, may suggest some influence exercised by present-day habits of feeding. The table for Edinburgh shows an almost continuous increase:

CANCER DEATHS

Year	Rate per Thousand Living	Year	Rate per Thousand Living
1898	0.88	1910	1.20
1899	0.90	1911	1.26
1900	0.95	1912	1.24
1901	0.92	1913	1.24
1902	0.98	1914	1.37
1903	0.99	1915	1.32
1904	1.04	1916	1.34
1905	1.07	1917	1.25
1906	1.03	1918	1.35
1907	1.07	1919	1.27
1908	1.10	1920	1.39
1909	1.16		

The Roentgen-Ray Treatment of Cancer

The following statement has been issued by the Council of the British Association for the Advancement of Radiology and Physiotherapy (a body which includes the great majority of roentgenologists in this country): "In view of the publicity given to radiotherapy for cancer by laudatory articles in the medical and lay press, and the extraordinary claims put forward by the authorities of the West London Hospital, it seems advisable that a considered statement on the use of these agents should be made. The treatment has not yet been thoroughly tested. It possesses great potential dangers, and may not prove as efficacious as the claims now made would suggest. In the nature of the case, however, no certainty can be arrived at for some years. The unwarranted laudation of the recent change in technic will probably lead to a reaction, and bring discredit on roentgen-ray treatment in general. The claim put forward by the Erlangen school is that by means of their special method it is possible to administer a dose of roentgen rays which will cure cancer in one application. This claim is commented on in the *Lancet:* 'The suggestion is made in the press that cases of malignant disease should go to the radiologist immediately the diagnosis is made, and before operation, is based on the observation of competent observers. There is little doubt that the time has come for us to reconsider our position in dealing with the situation.' This we regard as a most ill-advised pronouncement, and we emphatically disagree with the conclusions expressed. The time has not yet come when radiotherapy may be regarded as the first choice in the treatment of the majority of cases of cancer. . . . We believe that, of any single method, surgery still offers the best prospect of cure in nearly all cases of cancer, and that until much more convincing proof of the efficacy of roentgen-rays or other form of radiation is forthcoming it would be dangerous to encour-

age patients to trust to roentgen-ray treatment alone for the cure of these very serious conditions. The possibility of successful surgical intervention ought to be, in each particular case, fully discussed. We are, however, of the opinion that a closer cooperation between the surgeon and the radiologist would lead to a clearer appreciation of the value of irradiation in treatment, and that in all cases both surgery and irradiation therapy should be fully considered, with a view to making the fullest use of both. Combined treatment offers the greatest hope of success. The methods employed in this country up to the present have given promising results. They have been worked out for use in conjunction with surgery, and it would be unwise to abandon them before we are assured that the more intensive form of treatment will give the patient an increase of favorable chances. Radiologists in this country have, during the past few years, so far perfected their technic that the risk of any injury to the patient is now small, provided his treatment is under the direction of experienced men. In our opinion the real contribution to progress on the part of the Erlangen school is that they have employed in suitable quantities roentgen rays of a higher penetration than that hitherto used, and have also carefully systematized already known methods of measuring dosage. Whether or not these rays ultimately prove superior in all cases to those of less penetration, this is an achievement for which they will always be entitled to credit. It is unnecessary to import the apparatus from Germany; several firms in this country are now making the requisite equipment, so that difficulty of obtaining plant will not be a bar to research."

PARIS

(From Our Regular Correspondent)

Aug. 20, 1921.

Aid to Famished Russia

At its recent session held in Paris, the supreme council had to deal with the problem of assistance to be given to Russia, which in its present famished state is fast becoming a prey to epidemic diseases. Lord Curzon stated that the opinion in Great Britain was that the commission having charge of the problem should be composed of three representatives from all countries interested and not merely of representatives of the allied nations. Lord Curzon emphasized also the urgent character and the enormity of the task of protecting Europe against cholera and typhus fever now raging in Russia. In the opinion of the British government, precautionary measures should be taken immediately. Last year, through the instrumentality of the League of Nations, large and small countries contributed proportionately to the expense entailed by the application of prophylactic measures —especially in Poland. At the present date the commission in charge of this work has exhausted its financial resources, and is thus threatened with collapse at a time when the danger is even greater than last year. Consequently, Lord Curzon proposed that the supreme council invite the contributory powers to continue to supply the necessary funds to combat the terrible danger.

The supreme council has decided to appoint a private commission to be composed of three members from each country represented at the council. This commission will form the nucleus of a larger international commission, whose duty it will be to undertake the feeding of the starving Russians. The international commission will include representatives from neutral nations, such as Sweden and Denmark, and likewise from philanthropic societies (the Red Cross and similar organizations), who will be invited to cooperate with the delegates of the entente powers. The bodies of these two commissions, although their members are appointed by the various governments, will have no official character whatever, thus avoiding official recognition of the Russian soviets, though having the necessary intercourse with that government.

On the other hand, the Conférence de secours pour la Russie affamée, organized in Geneva by the Commission mixte du comité international de la Croix-Rouge et de la Ligue des sociétés de Croix-Rouges, adopted a resolution providing for the creation of a relief commission to combine the efforts of all philanthropic organizations, both private and official, that perform their functions without political or economic interest. In this resolution the conference requests the collaboration of all governments and asks that private relief associations support governmental action to the utmost by subordinating their efforts to the central organization that the conference is trying to create. The joint commission will have full power to form this organization, which will include representatives from various governments, as the sections from Red Cross commissions have already begun, or have the firm intention of initiating, relief work in Russia. Messieurs Nansen and Hoover (or his representative) were appointed high commissioners, with full power to conclude preliminary agreements with the Russian authorities, with the view to controlling the distribution and apportionment of aid. The commission was instructed to transmit to the League of Nations the resolution so voted, in order to obtain the collaboration of the league and uniform governmental action.

Death of Henri Beaunis

Prof. Henri Beaunis died recently at Cannet (department of Alpes-Maritimes) at the age of 91. He was one of the last surviving members of the medical faculty of the University of Strasbourg as constituted before the Franco-Prussian War. After the war, Beaunis was transferred from Strasbourg to Nancy, where he immediately took an active interest in the research work of the medical department of the university and in the joint discussions with the Ecole de la Salpêtrière on the subject of hypnotism. Thus he came to take up the study of physiology of the brain and physiologic psychology. He was later called on to establish at the Sorbonne the first French psychologic laboratory. He published, in collaboration with A. Bouchard, "Eléments de physiologie," in two volumes. He has published also his researches on cerebral activity, induced somnambulism, internal sensations, etc. Together with A. Binet, he founded the *Année psychologique*.

French Scientific Expansion in Foreign Countries

Dr. Marcel Labbé, professor in the medical department of the University of Paris, has accepted an invitation to deliver in Buenos Aires a course of lectures on the clinical aspects of biology. Next year, Professor Brumpt will deliver a series of lectures on parasitology in the medical department of the University of Buenos Aires. On the occasion of the official opening of the university at Peking, which is to take place in the near future, Dr. Tuffier, professor of clinical surgery in the medical department of the University of Paris, will give, at the request of the Rockefeller Institute, several clinical lectures, as well as demonstrations of operations, at the Union Medical College of Peking. He will also deliver the dedicatory address, the subject of which will be: "Surgical Septicemia and Its Treatment."

The New Ministry of Public Health

The *Journal officiel* has just published the text of the decree organizing the ministry of public health, charity and social provision. The functions of this ministry are divided into three departments: public health and social hygiene; relief of the poor, and housing and thrift. The department of public health comprises four bureaus: (1) public health and general hygiene; (2) sanitary prophylaxis, including prophylactic measures in epidemics; (3) birth propaganda and child welfare, and (4) social hygiene.

PEKING, CHINA

(From Our Regular Correspondent)

July 20, 1921.

Opening of the New Peking Union Medical College Hospital

During the month, the wards, operating rooms, clinical laboratories and outpatient department have been transferred from the old hospital of the Peking Union Medical College to the new. The last of the buildings of the new hospital was finished in June. It has a total bed capacity of 242. Of these, twenty-nine are for private patients, eight are for isolation cases, and thirteen are in the admission ward, where all ward cases are first sent for a process of cleansing and for special observation if necessary. Of the remaining 192, eighty are for the department of medicine, including pediatrics; sixty-two are for the department of surgery, including orthopedics and genito-urinary diseases; thirty are for the department of obstetrics and gynecology, ten for ophthalmology, and ten for otolaryngology.

THE MEDICAL SUPERINTENDENT

Dr. Ralph B. Seem, who has been working for the last two years on the plans for the new Albert Merritt Billings Hospital in Chicago, of which he is the director, has been lent by the University of Chicago to the Rockefeller Foundation for one year, to act as medical superintendent of the new Peking Union Medical College Hospital.

PROGRAM OF THE OFFICIAL OPENING

The program for the official opening provides a schedule for eight days, beginning September 15. Government representatives, delegates from universities and other medical schools, noted scientists and medical men from many countries will be present to read papers or take part in the clinical meetings. The program follows:

Thursday, September 15: "Evolution of the Ocular Symptoms in Pituitary Disorders," Dr. George de Schweinitz, professor of ophthalmology, University of Pennsylvania Medical School. Inspection of plant and reception. "Survey of Medical Education in China," Dr. Pearce, director of the division of medical education of the Rockefeller Foundation.

Friday, September 16: Sectional clinics. Trustees' meeting. "Plague in the Orient, with Special Reference to the Manchurian Outbreak," Dr. Wu Lien-Teh of the North Manchurian Plague Prevention Service. Sight seeing. "Conquest of Yellow Fever," Dr. Vincent, president of the Rockefeller Foundation.

Saturday, September 17: Sectional clinics. Trustees' meeting. "Osteomyelitis," Dr. T. Tuffier, professor of surgery, University of Paris. Reception by President Hsü of the Chinese Republic. Moving pictures. Lecture by Dr. W. W. Peter of the Council on Health Education of China.

Sunday, September 18: Sermon by Rt. Rev. L. H. Roots, bishop of the American Episcopal Church in Hankow, China. Organ recital.

Monday, September 19: Sectional clinics. Trustees' meeting. "Problems of Parasitology in the Orient," Dr. R. T. Leiper of the London School of Tropical Medicine. Dedication exercises. "Biochemistry in Retrospect and Prospect," Dr. A. B. Macallum, professor of biologic chemistry, McGill University.

Tuesday, September 20: Sectional clinics. Address by Dr. Florence R. Sabin, professor of histology at Johns Hopkins University. "Search for the Ideal in Hospital Organization," Dr. S. S. Goldwater, superintendent of Mount Sinai Hospital, New York.

Wednesday, September 21: Sectional clinics. Trustees' meeting. "The Clinical Importance of the Vital Capacity of the Lungs," Dr. Francis W. Peabody, associate professor of medicine, Medical School of Harvard University. Sight seeing. "Hookworm Prevention in the Eastern Hemisphere," Dr. Victor G. Heiser of the International Health Board of the Rockefeller Foundation.

Thursday, September 22: Sectional clinics. Trustees' meeting. "The Present Status and the Future of Chemotherapy," Dr. S. Hata of the Kitasato Institute, Tokyo. Sight seeing. "How Medicine Advances and Contributes to Human Progress," Dr. William H. Welch, professor emeritus of pathology, Johns Hopkins University; director, School of Hygiene and Public Health, Baltimore.

Sectional meetings will be held each week day from September 16 to September 22 by the departments of medicine, surgery, pathology, obstetrics and gynecology; on each week day except Monday by the department of ophthalmology; on Saturday and Monday by the department of otolaryngology, and on Tuesday and Wednesday by the department of neurology.

VIENNA

(From Our Regular Correspondent)

Aug. 12, 1921.

Conference on Child Welfare Work

A short time ago, a conference on the international aspects of child welfare, organized by the "Vienna Society of Friends' Relief Mission," took place in this city. A number of persons busily engaged in this kind of work were present, the principal being Mrs. Hainisch (who is mother of the present president of Austria), two English women physicians (Miss Courtney and Miss Clark), Miss Addams of the Women's International League for Peace and Freedom, and Professor Pirquet of Vienna. Representatives from Switzerland, Germany and France were present. Dr. Clark reported on the importance of international legislation, coupled with the proper instructions of the general public for the promoting of economic welfare of all classes. Professor Pirquet dwelt in his papers chiefly on the incidence of tuberculosis in Vienna. He showed how, owing to the underfeeding produced by the war and the time thereafter, the tuberculous taint had reached an enormous extent among the children of all classes here. More than 90 per cent. of all examined children had responded positively to the cutaneous test. The measures taken by the hospital authorities to grapple with the problem were handicapped by the absence of tuberculosis sanatoriums for children; only within the last few years, three such institutes were organized with a capacity of about 800 beds. So in the children's clinic the roof of the wards was transformed into an open air sanatorium, with 100 beds. The results obtained thereby are excellent. The necessity of balancing the needs of one country by the surplus of another as regards food was emphasized by Miss Addams, who recommended a certain international level as regards child welfare work. Other papers dealing with infant mortality and the age incidence of tuberculosis were also presented. It appears from these that the cause of infants' deaths is now mainly to be found in a general weakness of the offspring produced by the bad health of the parents, and not so much in disease of the alimentary organs. The latter seem to be benefited by the custom of breast nursing prevailing here nowadays, because of the scarcity of cow's milk. The paper on "Alcohol and Children's Health" attributed a large decrease of illness among children to the reduced amount of alcohol now available to the parents, partly because of financial straits, partly because of lack of material, and advocated restriction of the sale of alcohol, as practiced in America, as one of the chief means to produce a healthier race.

Enlargement of the Vienna Clinics

Among other useful plans, the break-up of the empire has brought also to a standstill the suggested erection of the new clinics begun in 1912. It would cost now more than the whole reduced republic could honestly spend. Therefore the government has adopted and brought into life a new plan to obtain sufficient beds and space for scientific research in the existing hospitals without undue expense. The old military hospitals have been adopted for this purpose, and several of the institutes not belonging strictly to the clinics have been already located there. Thus, the psychoneurotic ward for cases of minor importance as regards teaching has been transferred to the old garrison hospital adjoining the old "Allgemeines Krankenhaus" general hospital, well known to all American physicians who visited Vienna before the war. Also the kitchen for the hospital staff and the attendants and nurses is now situated in the military hospital, so that the kitchen in the Allgemeines Krankenhaus can devote itself solely to the wants of the patients—a much desired improvement of the state

existing hitherto. The nurses will in future also be housed in the apartments of the garrison hospital, their rooms in the clinics thus becoming free for other more important purposes. All the numerous administrative or economic offices will be transferred from there too; a special bureau of administration for all the clinics and wards of the general hospital is in course of adaptation in the garrison hospital block, which will enable a uniform handling of the complicated administrative business, and much space in the old house will be thus free for laboratories. The wards for skin diseases are also being transferred. Their area is being allotted to the clinics for dermatology. It must be added here for better understanding that, with us, only the clinics serve for purposes of instruction, while the wards are simply therapeutic institutes, not open for students but only for graduate medical work. The institute for forensic medicine will be joined to the old garrison hospital's post-mortem department, and its extensive space will be used by the institute of chemistry and pathologic anatomy. The histologic institute of Professor Störck and the collection of moulages (wax models and reproductions of specimens and cases) of Professor Henning—a unique collection—are also moving out. Thus, a decisive change in the management of the clinical administration and teaching is being quietly brought about which will take at least half a year to be completed. The effect will be that for the near future the Vienna General Hospital will continue to be one of the largest hospitals of the world, and with 2,600 clinical beds will offer excellent opportunity for teaching and learning and enable Vienna to hold its own as a medical center.

Charity Work of the Society of Friends and the American Red Cross

At a recent meeting of the Vienna Medical Society, several reports were made on the noble work of children's help and famine relief conducted by the various foreign missions, which are chiefly responsible for the saving of many thousands of lives of infants and children in this and other cities of the former famine districts. Professor Moll's paper dealt with the organization of this work, in which he played a prominent part. More than 50 per cent. of all children born in Vienna between 1918 and now came under the scope of this welfare work, and as 90 per cent. of all children were breast fed, the mortality of infants dropped very low. The mothers were instructed to bring not only ill babies but also the healthy ones. Chiefly by means of the Anglo-American Society of Friends, the material and funds required for this work were obtained. More than fifty distributing centers were organized, where the mothers got the grants, consisting of milk, provisions and sundry articles of clothing, as well as money. A few figures will illustrate the extent of help rendered. The distributed quantities were: 630,000 kg. of flour and rice; 7,000,000 tins of condensed milk; 112,000 kg. of powdered milk; 270,000 kg. of lard; 370,000 kg. of sugar; 150,000 kg. of cocoa; 115,000 kg. of soap; 25,000 pairs of shoes; 2,000 van loads of wood; 60,000 children were recipients of weekly food packets, distributed only on a medical certificate; each packet containing two tins of condensed milk, one-half pound of rice flour or oatmeal, one-half pound of sugar and lard, besides some cocoa and soap. Care was taken to insure that the children really consumed the articles intended for them, and a small nominal charge was made for it, so that the depressing feeling of charity was as much as possible done away with. Gradually the distribution is now being diminished, and the whole work will be changed into "help for tuberculous children," and between 500 and 600 such children will be housed in special sanatoriums by means of the grants from the charitable missions mentioned. Papers by Bökin, Dehne and Gränfeld were also read, giving similar information. It was stated especially that the American Red Cross has taken over the welfare work for infants. A network of centers for this work is being laid over all Austria, consisting of 100 offices, and the care of pregnant women will be one of the points of the program. The scientific value of such work will be controlled by selecting one special district, hitherto not much cared for, and to control its general health, morbidity and mortality with a view to the effect of this welfare work after a longer period. Furthermore, the system of distributing free meals to schoolchildren and apprentices came to the scope of the Society of Friends and the American "feed the children" fund. With the cooperation of Professor Pirquet, Dr. Nobel and Dr. Mayerhofer, in quick succession a number of kitchens were opened, where the children got every week day a free meal consisting of a warm porridge, or rice or macaroni, with sweet milk or cocoa and a white-flour pastry, each meal having the food value of 1,000 nems, or a liter of pure cow's milk. From 60,000 meals a day, the work increased to 400,000 meals a day. Chief credit is due to Mr. Herbert Hoover for this wonderful task of feeding a whole country's offspring. The foodstuffs used from June, 1919, till April, 1921, were valued at $4,952,000, with a food value of 89,500,000 kilonems. The parents had to contribute to the cost of paying a trifling sum to the city of Vienna, the state also contributing to the costs—of course, only a small percentage of the actual expenditure incurred. The result of such an energetic feeding was controlled by periodic examinations of the children. It is a remarkable fact that children who were admitted to the feeding gained in weight up to 18 per cent., while other groups who were not admitted, or in places where no American feeding center had been established, the children showed on renewed examinations a decided loss in weight. This proves that only this organization has been the means of improving the general condition of the children, especially in Vienna, the center of famine. This feeding will be gradually stopped, and the charitable work will be confined, as mentioned above, to the care of tuberculous children. The control of the actual food value of the meals distributed was effected by the method of dry substance tests (Pirquet). The controls are made at least once every month for each kitchen, and a mobile laboratory is engaged with this work in the country places, so that uniformity is thus insured.

BERLIN

(From Our Regular Correspondent)

Aug. 19, 1921.

Imposition of Penalties on the Mentally Deranged

For a number of years, the work of improving the penal code of Germany has been going on. The work was interrupted by the war. The recently published draft of certain reformatory ideas with respect to the penal code has also general interest as regards the problem of the penalties that should be imposed on the mentally deranged and the feebleminded. The Berlin psychiatrist Geheimrat Moll has given expression to a few observations on the subject that will doubtless be of interest to American physicians. Section 51 of the authorized penal code of the empire reads: "The doer of a wrong or criminal act is not punishable if at the time of committing the act he was in a state of unconsciousness (disorder of consciousness—Ed.) or was suffering from a pathologic disturbance of mental activity, on account of which condition the determining influence of his free will was excluded." The purpose of the section is to protect from punishment persons who on account of mental disorders are not accountable for acts that otherwise would be punishable

by law. As may be seen, there are three main notions to be considered: unconsciousness, pathologic disturbance of mental activity, and exclusion of the determining influence of the free will. Unconsciousness as used in the foregoing section comprises certain transitory conditions which we do not class among mental diseases; for example, drunkenness with disorientation, somnambulism, epileptic disturbances of consciousness, and hypnosis. Pathologic disturbance of mental activity concerns more the permanent conditions such as are found under the head of mental diseases; but the term "pathologic disturbance of mental activity" comprises much more than "mental disease," and for that very reason a special defining of the term is necessary in order to prevent its misuse. Therefore, in order to justify immunity from punishment, it is not sufficient that an act shall be committed in a condition of unconsciousness or of pathologic disturbance of mental activity, but it is essential that, owing to this condition, the determining influence of the free will shall be excluded or blocked. The choice of the term "exclusion of the determining influence of the free will" is not a happy one, and a great many objections have been raised against it. There must, naturally, be a limitation of immunity from punishment. It would not do to grant immunity for an act merely because the doer of the wrong was in a condition of pathologic disturbance of mental activity. But since many conditions must be regarded as pathologic disturbances of mental activity, although accountability is not excluded, provisions taking account of this fact had to be made. Again, many have felt the need of a provision to cover the cases of persons as regards whom the determining influence of the free will, as expressed in Section 51, was not excluded but who were strongly influenced by mental disturbance. A long struggle to introduce the notion of "lessened accountability" has been the consequence, and in the drafts of the new German penal code this idea has found expression. The last draft of 1919, therefore, introduces the feature of "lessened accountability." Section 18 of this draft, which corresponds to Section 51 of the old law, reads: "A person is not accountable for a wrong or a crime if at the time of its commission he was unable, by reason of some disorder of consciousness or pathologic disturbance of mental activity or some mental weakness, to understand the wrongfulness of the deed or to direct his will in accordance with his insight." Section 11 is worded thus: "If the ability of the doer of wrong to recognize the wrongfulness of the act was only highly lessened, for one of the reasons aforementioned, the punishment must be mitigated. This does not apply to disturbances of consciousness that rest on drunkenness for which the wrong doer is to blame." We note, then, here that "lessened accountability" is recognized. However, it would bring great damage to the public if persons who are dangerous generally but who on account of the plea of unaccountability have to be acquitted were allowed to move about freely and endanger their fellow men. Therefore, a new section of the law, which reads thus, has been proposed: "If on the ground of unaccountability a person is acquitted or relieved from further prosecution or is adjudged to present "lessened accountability," the court will order his detention in a public hospital or caretaking institution, in case public safety seems to demand such action."

The new draft proposes also other important amendments to the existing law. These concern children and juveniles. It is proposed to change the period during which juveniles may be held partially, and only partially, accountable for crime. At present it is from the completion of the twelfth to the completion of the eighteenth year. The proposed amendment provides that this period shall begin with the completion of the fourteenth year. The fundamental change for this period is, that the court is entitled to order that educative measures of the widest range and scope shall be instituted, but must first ascertain whether educative measures are likely to prove sufficient. If the last mentioned inquiry is affirmed, the court must, in fact, issue an order for the institution of educative measures and may not impose any penalty whatever. The court is entitled to issue such orders as it sees fit with respect to the commitment and training of juveniles, and not only orders as regards supervision and welfare training, although these are mentioned more particularly. Even though the court does not deem that the educative measures will be sufficient, it is not entitled, according to the new draft, to impose a penalty on juveniles without further investigation. To be sure, there are important safeguards in the old law as well. The old law provides that a juvenile must be acquitted if, at the time the deed was committed, he (or she) did not possess the necessary insight to be aware of its wrongfulness. The new draft, in spite of many opinions uttered expressing contrary views, has retained this provision essentially unchanged. Lack of insight shall exclude accountability if such lack is the result of arrested mental or moral development, which renders the juvenile incapable of comprehending the wrongfulness of the deed and of directing his will in accordance with such insight. In the section mentioned and in another section of like import, juveniles would seem to have been given as much consideration as is admissible. In the future, a juvenile will not be subject to punishment even though he may have known that he was doing wrong, provided, on account of arrested development, he was unable to resist the impulse to the misdeed or crime.

From Shepherd to Millionaire

In a small village of the province of Hanover, there died, a few days ago, one of the most notorious modern quacks—"Shepherd Ast," as he was called. Ast made his diagnoses on the basis of three hairs taken from the back of the neck of his patients. For his treatment he used mixtures and ointments of his own manufacture. For many years, patients flocked to him not only from all parts of Germany, but also from foreign countries as well, from which latter fact we derive the comfort of knowing that stupidity in medical affairs is international. Ast in his early years was a shepherd, but his excessive profits soon made him a millionaire (marks), enabling him to purchase a large estate, on which he resided.

The von Behring Institute for Experimental Therapy

Professor Uhlenhuth, formerly head professor of hygiene in Strasbourg, who, on account of the loss of Alsace-Lorraine, was obliged to leave the Hygienic Institute, which was established under his direction, before it had been actually dedicated, has refused a call to the professorial chair of hygiene in the Berlin university, as a successor to Professor Flügge. For those not familiar with the situation his refusal to accept this chair came as a surprise. It was well known that Uhlenhuth, while he was still in Strasbourg, entertained hopes that some day he might occupy the chair that was formerly established especially for Robert Koch. Now that Uhlenhuth, through loss of the Strasbourg professorship, has given up his academic activities and has been able to secure only a scanty income in the bacteriologic department of the public health service, of which he was formerly director, it was naturally supposed that he would regard a call as Flügge's successor as a stroke of fortune. There must, indeed, have been very strong reasons that caused him to refuse the offer. Economic conditions, with their powerful influence on the fortunes of men, with which we were so familiar, during the war, and which are still affecting us to an even greater extent, are mainly responsible for Uhlenhuth's decision. The income that he would have derived from his government position and all secondary sources would not have been sufficient to secure for him and his

family a proper living. Why the ministry did not see fit to increase the salary and thus secure a man so well qualified as Uhlenhuth to teach and carry on investigations, is the question. The financial straits of the government do not, it seems to me, furnish an adequate explanation. As far as I have been able to ascertain, some of the influential members of the Berlin medical faculty were not favorably impressed with Uhlenhuth's personality, and for that reason, doubtless, the minister of public instruction did not feel under obligations or even justified in granting an increase of salary as a favor to Uhlenhuth. Whether he would have accepted the call, if that had been the case, is not at all certain. The Hygienic Institute in Berlin, I may state, is quite antiquated and in many respects does not measure up to the demands of a modern institute of research. For this reason, Professor Rubner, something over ten years ago, while he was still professor of hygiene, succeeded in getting a new institute erected in Invalidenstrasse. When it was finished, Rubner, to everybody's surprise, exchanged his professorial chair for that of Professor Engelmann, head professor of physiology, then recently deceased, and the new institute changed its firm name, as it were, becoming the Institute of Physiology.

The Hygienic Institute, of which he had been the director and which formerly was the Institute of Physiology under du Bois Reymond, was turned over, with very few changes, to Professor Flügge of Breslau. This institute, then, with its antiquated equipment could not be expected to satisfy Professor Uhlenhuth, especially in view of the fact that under his management the Strasbourg institute had been fitted out with the best and most up-to-date equipment to be had. I will pass over certain other things that stood in the way, as they are more of a personal nature. But these matters and even the other objections would not have induced Uhlenhuth to refuse the call if, at about the same time, he had not been invited to take over the scientific management of the so-called Behring Works in Marburg. With the not inconsiderable profits that had accrued to Behring from the manufacture of diphtheria serum, he had established a large institute in Marburg, which was to serve not only for serotherapeutic researches but was also to aid in the manufacture of serums. In consequence of a nervous affection, which prevented him from throwing himself into the work and which, in spite of considerable improvement, had undermined his creative energy, the far-reaching plans of Behring, who was not only a great scholar but also a practical and prudent organizer, did not come to fruition. Nevertheless, he had been able to expand the technical department which he established at the Schlossberg in Marburg and to develop from it an independent organization, which was launched under the name of the Behring Works. Owing to the death of Behring in 1917, and more particularly, under the influence of the war, the activities of the Behring Works were reduced. About two years ago, an administrative council for the Behring Works was created, which, with the aid of new funds, assumed the task of carrying out Behring's plans. For this purpose, it was necessary to secure an able and well known investigator as the scientific director, who, through the influence of his name as well as by the results of his investigations, might be expected to restore the somewhat faded reputation of the Behring Works. Not only the immensity of the task but also the monetary inducements offered by such an organization proved, as any one will readily comprehend, strong incentives for Uhlenhuth, which made it much easier for him to refuse the call to Berlin. For the sake of the Behring Works, which have been rechristened "Institut für experimentelle Therapie von Behring," and much more for the sake of German science, it is to be hoped that Professor Uhlenhuth made the right decision.

Marriages

DANIEL D. V. STUART, JR., Washington, D. C., to Miss Margaret Atkinson Berry of Baltimore, at Annapolis, Md., August 30.

FRANK A. NORWOOD, Lockesburg, Ark., to Miss Dorothy Corbett of Ashdown, Ark., at Texarkana, July 24.

ALFREDO MOLLINEADO to Miss Lillian M. Bissett, both of Philadelphia, at Elkton, Md., in August.

VICTOR W. MAXWELL, Brookhaven, Miss., to Miss Edith Crawford of Laurel, Miss., July 28.

ADA B. CRAWFORD, San Francisco, to Mr. Robert William Brown of Los Angeles, August 24.

IRVING W. CHURCHILL to Miss Nora M. Haskins, both of University Place, Neb., August 6.

BENJAMIN T. BURLEY, Worcester, Mass., to Miss Angelyn Jefferds, in Chicago, August 20.

WILLIAM A. SHELTON to Miss Betty Louise Willis, both of Knoxville, Tenn., September 6.

GUSTAVE M. TAUBLES to Mrs. Mildred T. Bloomfield, both of San Francisco, August 6.

MAURICE S. ROSENTHAL to Miss Selma Abrams, both of New Orleans, September 1.

HENRY L. DOUGLASS to Miss Dorothy Lindsley, both of Nashville, Tenn., June 22.

C. R. MCDONALD, Jennings, Okla., to Miss Andry Massey of Oklahoma City, July 9.

WALTER ORLANDO HENRY to Miss Mabel Henderson, in Los Angeles, recently.

JAMES C. SHIELDS to Miss Kathryn Hanley, both of Butte, Mont., in August.

Deaths

Oscar Augustus King ● Chicago; Bellevue Hospital Medical College, New York, 1878; died, September 11, at Lake Geneva, Wis., aged 70. Dr. King was assistant physician, Wisconsin State Hospital for the Insane, 1879-1882; professor mental and nervous diseases, 1882; neurology, psychiatry and clinical medicine, 1894; vice dean since 1900 at the College of Physicians and Surgeons (University of Illinois), Chicago; professor neurology, Post Graduate Medical School. In 1883 Dr. King founded the Oakwood Retreat (for the insane), Lake Geneva, Wis., of which he was president and chief of staff; in 1896 he founded the Lake Geneva Sanatorium, and in 1901 amalgamated the two institutions of which he remained director. At the time of his death he was professor of neurology and pychiatry emeritus in the College of Medicine of the University of Illinois. He was one of the strongest factors on the faculty which finally brought about the incorporation of the College of Physicians and Surgeons into the university.

Louis David Wilson ● Wheeling, W. Va.; University of Pennsylvania, Philadelphia, 1870; died suddenly, August 27, from angina pectoris, aged 75. Dr. Wilson was a practitioner for nearly half a century, and county physician for fifteen years; at one time member of the House of Delegates of the American Medical Association; president of the West Virginia State Medical Association, 1890, and twice president of the Ohio Valley Medical Society; for twenty-five years on the staff of the Ohio Valley General Hospital (formerly the City Hospital), Wheeling, and since 1914 dean of that institution. For ten years he was editor of the *West Virginia Medical Journal*.

Theodore A. McGraw ● Detroit; College of Physicians and Surgeons (Columbia University), New York, 1863; died, September 7, aged 81. Surgeon and at one time president of the board, at St. Mary's Hospital, 1869-1914; founder of Detroit College of Medicine, and head of department of surgery, 1869-1912, and at one time president and dean of that institution. He was a practitioner for over fifty years; ex-president of the American Surgical Association; president of the Michigan State Medical Society, 1887; surgeon in the Civil War, with rank of captain, and a member of the Detroit Board of Commerce.

● Indicates "Fellow" of the American Medical Association.

Christian S. Reimstad ● Brainerd, Minn.; University of Minnesota, Minneapolis, 1896; formerly attending physician at the State Soldiers' Home; associate of the Northwestern Medical and Surgical Association, Inc., hospital staff as specialist in internal medicine; died, August 28, at the Northwestern Hospital, from a fractured skull, caused by a fall six weeks before, aged 54.

J. Irving Heritage, Langhorne, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1921; intern, Metropolitan Hospital, Blackwell's Island, New York; served in the M. C., U. S. Army, during the late war; died, August 24, in the Hahnemann Hospital, Philadelphia, from spinal meningitis following septic inflammation of the ear, aged 22.

Gustavus Ferdinand Theel, Philadelphia; Philadelphia University of Medicine and Surgery, 1869; Beach Medical Institute, Indianapolis, 1880; practiced in Philadelphia for fifty-two years; served two terms as mayor of Ambler, Pa.; died, August 27, at Lakeland, Fla., where he had resided for the last two years, from heart disease, aged 82.

Emanuel S. Wenger ● Lincoln, Neb.; University of Michigan, Ann Arbor, 1889; professor of orthopedic surgery, Nebraska College of Medicine, Lincoln; medical examiner for the Burlington Railroad, Brookfield, Mo., 1891-1904, and Lincoln, Neb., 1904 until his death; died, August 25, following an operation at St. Elizabeth's Hospital, aged 68.

Albert G. Henry, North Baltimore, Ohio; Columbus Medical College, 1881; member of the Ohio State Medical Association; gave $175,000 to build the first electric light plant, opera house, and drug store in North Baltimore; surgeon for the Baltimore and Ohio Railroad for twenty-five years; died, August 27, from strangulated hernia, aged 72.

Edward William Swafford, Sturgis, S. D.; Bennett Medical College, Chicago, 1909; member of the South Dakota State Medical Association; he was confined to a wheel chair for years, suffering from arthritis deformans, but continued his medical work in his office; died in August, from atrophic cirrhosis of the liver, aged 43.

George Barnes, Killingly, Conn.; New York University Medical College, New York, 1896; member of the Connecticut State Medical Society; during the late war acted as examining physician for the district selective service board; died, August 27, in a Rutland sanatorium, from tuberculosis, aged 45.

Anson M. Norton, Bristol, Vt.; University of Vermont, Burlington, 1889; member of the Vermont State Medical Society; surgeon-general on the staff of the Governor Fletcher Proctor; member of the state legislature, 1906-1908; died, August 27, after a long illness, aged 57.

Mahlon Bolton, Rich Square, N. C.; Jefferson Medical College, Philadelphia, 1885; member of the Medical Society of the State of North Carolina; member of the state legislature for Northampton County; died suddenly, August 25, aged 58.

Eugene E. Haynes ● Memphis, Tenn.; Memphis Hospital Medical College, 1891; visiting physician to St. Joseph's Hospital; surgeon for Memphis Street Railway for twenty-five years; died suddenly, August 31, from heart disease, aged 52.

Samuel E. McCully, Victoria, Texas; Victoria University, Toronto, Canada, 1862; Missouri Eclectic Medical College, Kansas City, 1898; served as a surgeon during the late war; died suddenly, August 23, from heart disease, aged 80.

William R. Frisbie, Washington, D. C.; College of Physicians and Surgeons, Keokuk, Iowa, 1880; retired pension examiner; died, July 3, at the Carrol Springs Sanatorium, Forest Glen, Md., from cerebral hemorrhage, aged 85.

William J. Goodman, Tyler, Texas; Medical College of the State of South Carolina, Charleston, 1855; practitioner for over fifty years; also a druggist; Confederate regimental surgeon in the Civil War; died, August 27, aged 88.

Harley H. Sutton ● Aurora, Ind.; Medical College of Ohio, Cincinnati, 1876; Jefferson Medical College, Philadelphia, 1877; president of the Dearborn County Medical Society; died, September 3, from heart disease, aged 71.

Aaron Lee Carmichael ● Little Rock, Ark.; University of Arkansas, Little Rock, 1904; assistant demonstrator of anatomy, Arkansas University Medical Department; died, August 29, after a long illness, aged 43.

Franklin Deare Sickles, Fredericktown, Ohio (license, Ohio, 1896); member of the Ohio State Medical Association; practitioner for over half a century; Civil War veteran; died, August 7, after a long illness, aged 71.

Asa Nathaniel H. Ballard, Birmingham, Ala.; Pulte Medical College, Cincinnati, 1876; several times president of the Alabama State Homeopathic Medical Society; Civil War veteran; died, August 24, aged 79.

Franklin Henry Darby ● Columbus, Ohio; Medical College of Ohio, Cincinnati, 1875; state superintendent of the Children's Home Society of Ohio for twenty-eight years; died, August 29, from paralysis, aged 75.

Christopher C. Dalton, Slocomb, Ala.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1890; member of the Medical Association of the State of Alabama; died, August 21, at a Dothan hospital, aged 62.

Gertrude A. G. Bishop, Brooklyn; New York Medical College and Hospital for Women, New York, 1877; for seventeen years delegate to the New York State Homeopathic Society; died, September 5, aged 84.

Frederick Mizer Aitkin, Bristol, Ind.; College of Physicians and Surgeons (Columbia University), New York, 1868; practitioner for nearly half a century; died in August from cerebral hemorrhage, aged 75.

Samuel P. Longstreet, Scranton, Pa.; New York University Medical College, New York, 1886; member of the Medical Society of the State of Pennsylvania; died, August 16, from heart disease, aged 59.

William H. Metcalf, Marietta, Ohio; Cincinnati College of Medicine and Surgery, 1889; member of the Ohio State Medical Association; died, July 29, in Reno, near Marietta, from heart disease, aged 56.

Francis James Drake ● Phillipsburg, N. J.; University of Pennsylvania, Philadelphia, 1900; school physician since 1913; died, August 26, at the Easton (Pa.) Hospital, from epilepsy, aged 51.

Robert Benson McLaughlin ● Centerburg, Ohio; Starling Medical College, Columbus, 1905; captain, M. C., U. S. Army, during the World War; died, July 9, from cerebral hemorrhage, aged 48.

Henry A. Kimery, Knoxville, Ill.; Barnes Medical College, St. Louis, 1898; shot himself through the head with a shotgun, August 22, while suffering from mental derangement, aged 53.

Samuel Burton McGarry, Joice, Iowa; Drake University, College of Medicine, Des Moines, 1903; died, August 21, in a hospital at Mason City, from chronic nephritis; aged 47.

Henry W. Sawtelle ● Washington, D. C.; Georgetown University of Medicine, Washington, 1868; assistant surgeon of the U. S. Public Health Service since 1873; died, August 19.

James Harvey English, Flat River, Mo.; Missouri Medical College, St. Louis, 1890; member of the Missouri State Medical Association; died, July 12, from chronic nephritis.

Joel H. Barber, Pittsfield, Ill.; Missouri Medical College, St. Louis, 1891; member of the Illinois State Medical Society; died, July 29, from carcinoma of the liver, aged 67.

William J. Ware, Mount Union, Iowa; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1900; died in June from diabetes insipidus, aged 53.

John Frederick Wright, Keezletown, Va.; College of Physicians and Surgeons, Baltimore, 1876; member of the Medical Society of Virginia; died, June 26, aged 68.

Daniel Hampton Bowen ● Waukon, Iowa; Rush Medical College, Chicago, 1876; former speaker, Iowa house of representatives; died, August 27, aged 70.

G. H. Ferrall, Spokane, Wash.; Cleveland Medical College, Ohio, 1871; Civil War veteran; died, August 16, from cerebral hemorrhage, aged 77.

James K. P. Green, Nixon, Texas; Texas Medical College and Hospital, Galveston, 1870; died, July 18, from cerebral hemorrhage, aged 76.

Arthur White, Rockport, Ind.; University of Maryland, Baltimore, 1854; served as surgeon in the Civil War; died, August 11, aged 89.

Frank McRae, Melrose, Fla.; Albany Medical College, New York, 1870; at one time member of the state legislature; died in August, aged 71.

Amelia J. Prior, Cincinnati; Women's Medical College of Cincinnati, 1892; died, July 9, in a Zanesville hospital, aged 65.

Herman F. Raible ● Detroit; Michigan College of Medicine and Surgery, Detroit, 1900; died in June, aged 52.

George W. Hedgecock, Sidonia, Tenn.; Nashville Medical College, 1893; died, August 13, aged 52.

Joshua S. Barnes, St. Petersburg, Fla.; Louisville Medical College, 1875; died, August 4, aged 67.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Mott's Compound Female Pills.—The Williams Mfg. Co., Cleveland, Ohio, shipped a quantity of this product in January, 1920, from Ohio to Michigan. When analyzed in the Bureau of Chemistry, the pills were found to consist essentially of aloes, ferrous sulphate ("green vitriol") and cantharides ("Spanish fly"). Some of the claims made for these pills were:

"They restore the menstrual flow."

"In cases of Leucorrhea (the whites), Amenorrhea (suppressed menses), Menorrhagia (immoderate flow of the menses), Dysmenorrhea (painful menstruation) and . . . Nervous and Spinal Affections, Pains in the Back and lower parts of the body, Heaviness, Fatigue on Slight Exertion, Palpitation of the Heart, Lowness of Spirits, Hysteria, Sick Headache, Giddiness, and all the . . . complaints produced by a disordered system. . . . In Prolapsus Uteri or Uterine Weakness. . . ."

The claims made were declared false and fraudulent and in November, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9155; issued July 25, 1921.*]

Job Moses, J. Clarke's Female Pills.—In May, 1920, the Williams Manufacturing Co. of Cleveland, Ohio, and the Eastern Drug Co. of Boston, Mass., shipped a quantity of this product into the state of Michigan. When analyzed in the Bureau of Chemistry, the pills were found to consist essentially of aloes, a salt of iron, and oil of peppermint. Some of the claims made in or on the trade package for these pills were:

". . . good for many . . . painful and dangerous disorders to which the Female . . . is subject."

"They moderate excessive menstruation and relieve suppressed menstruation."

"In . . . cases of Leucorrhea (the whites), Amenorrhea (suppressed menses), . . . Dysmenorrhea (painful menstruation), . . . speedy relief may be expected."

These and similar claims were declared false and fraudulent and in November, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9156; issued July 25, 1921.*]

Gono Capsules 761, Renol Capsules, and Gonna Specific.—A quantity of these various products was shipped in March, 1920, and February, 1921, by the Grape Capsule Co., Allentown, Pa., into the state of New York. Each of the products was labeled as a remedy for "Gonorrhea, Gleet and all Kidney and Bladder Troubles." When analyzed in the Bureau of Chemistry each of the preparations was found to consist of capsules containing, essentially, salol, oleoresin of cubebs, copaiba balsam, pepsin, cottonseed oil and plant extractives. Because of the false and fraudulent claims the stuff was declared misbranded and in March, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 9239; issued Aug. 12, 1921.*]

Haskin's Nervine.—The Haskin Medicine Co., Binghamton, N. Y., shipped in July, 1920, and January, 1921, respectively, a quantity of this product which the federal officials declared was misbranded. Some of the claims made on the trade package for this preparation were:

"Nervine The Great Nerve Tonic and Blood Purifier. . . . For Liver Complaint, Female Weakness, Nervous Affections, Rheumatism, Kidney Trouble, Dyspepsia, Indigestion, . . . Biliousness and Catarrh . . . Nervous Diseases, Pains in the Heart and Shoulders, . . . Indigestion, Headache, Heartburn, Loss of Appetite, Dizziness, Numbness, Nausea, Fluttering of the Heart, Faintness, Rheumatism and Kidney Trouble . . . Nervous Prostration and Female Complaints . . ."

"It strengthens the nerves, Purifies the Blood, Tones up the System, makes New Rich Blood, Clear Skin, and Ensures Perfect Health."

These were only a few of the things for which Haskin's Nervine was recommended as a cure. When this marvel was analyzed by the federal chemists they found that it was nothing more mysterious than a solution of Epsom salt, sweetened, flavored and colored with caramel! Because of these fraudulent claims the stuff was declared misbranded and in March, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed. —[*Notice of Judgment No. 9234; issued Aug. 12, 1921.*]

Correspondence

WHY SHUN SHORT WORDS?

To the Editor:—Two classes love to use long words when short words would do as well or better. Not that all darkies or all doctors have this trait. When Sambo, trying to impress his hearers with his learning, uses long words with which he is not familiar, he makes laughable mistakes. And he is not the only one who has this misfortune.

Possibly the doctor's motive in using long words when there are more appropriate short words is to give dignity to his paper—to give proof of his command of English, and incidentally of his professional ability. Not being able to write simple English, he attempts to write a more florid, pompous, impressive style, and succeeds in preparing something which the "T. and S." editor might welcome.

It is not urged that physicians should write their professional or scientific papers in words of one syl-la-ble for the use of the first-reader class. Technical terms are a sort of shorthand, and any attempt to write a scientific description in simple words without the use of technical terms would make the article long and tedious. This necessary use of scientific shorthand is not what is referred to, but the use of long words of classical origin, when the crisp Anglo-Saxon words are more appropriate.

As a familiar instance, the good Anglo-Saxon word *cause* is almost taboo. No disease ever has a *cause;* it has an *actiology!* Doctors use the five-syllabled word as though it meant exactly the same as the monosyllable, which it does not, as a reference to Webster will show. It is not proper, for instance, to say that the *actiology* (or etiology) of typhoid fever is the Eberth bacillus, or any sentence of like import. It might be proper, in discussing the disease, to have a subhead, Etiology, and under this to state that the specific cause of typhoid fever is the Eberth bacillus. But *cause* is not "scholarly" enough!

George H. Heald, M.D., Takoma Park, D. C.

QUESTION OF ANCHORING THE ENDS OF A SUBCUTICULAR SUTURE

To the Editor:—In The Journal, Sept. 3, 1921, p. 789, Dr. L. M. Van Meter gives a complicated description of a method of anchoring a subcuticular suture. I have used a subcuticular suture many times and have never seen the necessity of anchoring at all, either with catgut or silkworm gut, simply leaving both ends free.

E. L. Caddick, M.D., Quincy, Ill.

"THE EXPENSIVE 'POOR MAN'S MEDICINE'"

To the Editor:—The editorial comment on "The Expensive 'Poor Man's Medicine'" (The Journal, September 10, p. 867) brings to mind a case in which a man recently died of cancer of the bladder and prostate. His widow came to see what

my bill was, and said that she had no money to pay me, but remarked that the old man had paid out more than $50 for medicines he had had sent him from Atlanta, Ga.

H. H. SCHULTZ, M.D., Sutton, Neb.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

OIL OF GURJUN

To the Editor:—A British colleague practicing in India makes mention, in a personal letter, of oil of gurjun, intimating its superior utility in the treatment of scabies and other parasitic affections of the skin. Sajous and others make fragmentary reference to its use in the treatment of leprosy, stating that the active principle is presumed to be gurjunic acid. Please give a résumé of its pharmacology. Has the possibility of its specificity for acid-fast bacilli been investigated as has been done in the case of chaulmoogra oil? Is there any structural resemblance between gurjunic acid and gynocardic acid? Please omit my name.

P. M. D., Granite City, Ill.

ANSWER.—Oil of gurjun (wood oil; gurjun balsam) has been known to Europeans since 1811, and has often been employed for the sophistication of copaiba. It is obtained from *Dipterocarpus turbinatis* and several other species, and contains a sesquiterpene and a resin, the latter composed chiefly of gurjunic acid. "Its similar action to copaiba balsam was made known in India by the physician O'Shaughnessy as early as 1812. It acquired a considerable reputation in India as a remedy against leprosy, later also in England in dermatological practice" (Gildemeister and Hoffmann: The Volatile Oils, Ed. 2, translated by Edward Kremers, p. 159). However, any remedial influence on diseased mucous membranes which it might possess is probably similar to that of the different turpentines. We know of no reliable pharmacologic or bacteriologic work with oil of gurjun. Gurjunic acid does not resemble the acids which have been isolated from chaulmoogra oil.

PHYSICIANS AND THE INCOME TAX

To the Editor:—It seems to me that you sometime ago published a ruling made by the U. S. Treasury Department to the effect that expenditures made by physicians in traveling to and from conventions and covering postgraduate study are deductible from income tax payment; or, such items are necessary and legitimate expenses incurred as part of the practice of medicine. I did postgraduate work last year and deducted the cost from my income and was surprised the other day by receiving a bill from the office of the local revenue collector for the tax on the amount deducted. Your prompt reply and advice in this matter will be greatly appreciated.

H. M. S.

ANSWER.—Articles on "Physicians and the Income Tax" appeared in THE JOURNAL, Jan. 10, 1920, p. 126; Jan. 15, 1921, p. 183, and Feb. 12, 1921, p. 455. Railroad expenses and living expenses in excess of expenses at home for the same period incurred in attending meetings of medical societies are deducted from the gross income as legitimate business expense. Expenses incurred in graduate medical study are not deducted, as they are regarded as an investment rather than as current expenses.

BÖHME'S SOLUTIONS FOR INDOL TEST

To the Editor:—Can you give me the formula of Böhme's solutions referred to in the description of Goré's indol test published in the *Indian Journal of Medical Research*, January, 1921, and abstracted in THE JOURNAL, Aug. 27, 1921, p. 735?

CURRAN POPE, M.D., Louisville, Ky.

ANSWER.—Two of these solutions are used in the performance of this test. Solution 1: Paradimethylamidobenzaldehyd, 1 gm.; absolute alcohol, 95 c.c.; hydrochloric acid, 20 c.c. Solution 2: Potassium persulphate, 1 gm.; distilled water, 100 c.c. The under surface of the cotton wool plug of the culture tube is moistened evenly with a few (from four to six) drops of the persulphate solution, and then with a few drops of Solution 1. The persulphate helps to oxidize the indol compound from a lavender to a rather intense rose color, even when the quantity of indol is as little as 0.0005 mg. per cubic centimeter of the broth culture.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, Oct. 4-5. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
CALIFORNIA: Sacramento, Oct. 17-20. Sec., Dr. Charles B. Pinkham, 135 Stockton St., San Francisco.
COLORADO: Denver, Oct. 4. Sec. Dr. David A. Strickler, 612 Empire Bldg., Denver.
DISTRICT OF COLUMBIA: Washington, Oct. 11. Sec., Dr. Edgar P. Copeland, 1315 Rhode Island Ave., Washington.
FLORIDA: Tallahassee, Oct. 11. Sec., Dr. William M. Rowlett, Citizens Bank Bldg., Tampa.
GEORGIA: Atlanta, Oct. 11-13. Sec., Dr. C. T. Nolan, Marietta.
HAWAII: Honolulu, Oct. 11. Sec., Dr. G. C. Milnor, 401 S. Beretania St., Honolulu.
IDAHO: Boise, Oct. 4. Director, Mr. Paul Davis, Boise.
KANSAS: Topeka, Oct. 11. Sec., Dr. Albert S. Ross, Sabetha.
MICHIGAN: Lansing, Oct. 11. Sec., Dr. Beverly D. Harison, 504 Washington Arcade, Detroit.
MINNESOTA: Minneapolis, Oct. 4-6. Sec., Dr. Thomas McDavitt, 539 Lowry Bldg., St. Paul.
MISSOURI: Kansas City, Sept. 26-28. Sec., Dr. Cortez F. Enloe, State House, Jefferson City.
MONTANA: Helena, Oct. 4. Sec., Dr. S. A. Cooney, Power Bldg., Helena.
NEW JERSEY: Trenton, Oct. 18-19. Sec., Dr. Alexander MacAlister, State House, Trenton.
NEW MEXICO: Santa Fe, Oct. 10-11. Sec., Dr. R. E. McBride, Las Cruces.
NEW YORK: Albany, Buffalo, New York City and Syracuse, Sept. 26-29. Mr. Herbert J. Hamilton, Asst. Professional Examinations, Education Bldg., Albany.
OKLAHOMA: Oklahoma City, Oct. 11-12. Sec., Dr. J. M. Byrum, Shawnee.
PHILIPPINE ISLANDS: Manila, Oct. 11. Sec., Dr. Fortunato Pineda, 612 Rizal Ave., Manila.
PORTO RICO: San Juan, Oct. 4. Sec., Dr. M. Quevedo Baez, Box 804, San Juan.
RHODE ISLAND: Providence, Oct. 6-7. Sec., Dr. B. U. Richards, State House, Providence.
UTAH: Salt Lake City, Oct. 4. Sec., Dr. J. T. Hammond, Capitol Bldg., Salt Lake City.
WEST VIRGINIA: Clarksburg, Oct. 11. Sec., Dr. W. T. Henshaw, Charleston.
WYOMING: Cheyenne, Oct. 3-5. Sec., Dr. J. D. Shingle, Cheyenne.

REPORT OF SPECIAL COMMITTEE REGARDING THE UNIVERSITY OF MINNESOTA MEDICAL SCHOOL

A report has recently been issued regarding conditions at the University of Minnesota Medical School as the result of a survey made last February by a special committee consisting of Dr. Frank Billings, professor of medicine, Rush Medical College, Chicago; Dr. J. M. T. Finney, professor of surgery, Johns Hopkins University Medical Department, Baltimore, and Dr. Victor C. Vaughan, dean of the University of Michigan Medical School, Ann Arbor. The survey was made at the request of President L. D. Coffman in an attempt to solve several problems that have confronted the medical school during the last few years.

During the last few years certain complaints have been made by the alumni of the University of Minnesota Medical School and by general practitioners of the state in regard to the conduct of the medical school. This led to the appointment by the president of a committee of three men who would be absolutely unbiased and unprejudiced to investigate the charges. The committee in its report in regard to the appointment of a dean—one of the main problems under discussion—suggested that he should be nominated by the medical faculty for appointment by the board of regents. The committee made it clear, however, that its recommendation in no way "questioned the ability, honesty or devotion to his work of the present dean," and that "the character of the man is the most important of all the factors which qualify one for deanship."

Another problem was that connected with the merger of the Mayo Foundation with the medical school. On this point the committee reported that it was "unable to find the slightest evidence that Dr. William J. Mayo's interest in the Mayo Foundation has in any way biased his action or impaired his fitness as a regent. The committee is of the opinion that the presence of Dr. Mayo on the board has not been and is not now characterized by any action on his part derogatory to the development of the medical school." The committee referred to the Mayo Foundation as "an asset which is not equaled in any other university in the world."

A summary of the committee's recommendations follows:

The dean of the medical school should be nominated by the medical faculty for appointment by the board of regents, heads of all departments in the medical school having votes in this selection.

The laboratory facilities, buildings and equipment should be enlarged as quickly as possible.

The salaries of laboratory men should be increased.

Heads of clinical branches should be part-time men.

Enlargement of the university hospital to provide approximately from 400 to 500 beds.

Administrative officers of the faculty of the medical school should recognize the fact that the chief function of this school is to supply the state with general practitioners of medicine.

Every effort should be made by the administrative officers and the faculty to cooperate with and assist the practitioners of the state in furnishing them with opportunities for refreshing their knowledge in both laboratory and clinical branches and by helping them in the diagnosis and treatment of their cases.

In a resolution appended to the foreword in regard to the committee's report, the board of regents declares that "subject to the definitions of its powers and duties by the laws of the state, these principles set forth (in the committee's report) for the development of the medical school were adopted as the general policy which the board of regents will follow hereafter in its conduct of the medical school."

Alabama July Examination

Dr. Samuel W. Welch, chairman, Alabama State Board of Medical Examiners, reports the written examination held at Montgomery, July 12-15, 1921. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 33 candidates examined, 32 passed and 1 failed. Eight candidates were licensed by reciprocity. One candidate was licensed on government credentials. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Emory University (1921)	82.7, 83.3, 85.5, 86.5, 86.9	
Tulane University (1920) (1921)	83.5, 84.7, 85.2, 85.8, 88.9 75, 82.8, 85.8, 86, 86.8, 86.9, 87, 88.4, 89.6 89.7, 90, 91.1, 91.7, 93.1, 93.5.	
University of Pennsylvania (1921)		84.5
Memphis Hospital Medical College (1911)		77
Vanderbilt University (1921)	87.1, 87.4,	87.5
Meharry Medical College (1921)		75.4
Undergraduate		89.4
FAILED		
Meharry Medical College (1921)		71.3

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
Howard University (1919)		Dist. Colum.
Atlanta School of Medicine (1913)		Georgia
Chicago College of Medicine and Surgery (1915)		Louisiana
Kentucky University Medical Department (1902)		Kentucky
University of Oklahoma (1915)		Oklahoma
University of Tennessee (1919)		Mississippi
Medical College of Virginia (1899), (1908)		Virginia

College	Year Grad.	Endorsement with
ENDORSEMENT OF CREDENTIALS		
Medical College of Virginia (1917)		U. S. Navy

Louisiana June Examination

Dr. Roy B. Harrison, secretary, Louisiana State Board of Medical Examiners, reports the written examination held at New Orleans, June 9-11, 1921. The examination covered 12 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 67 candidates examined, 63 passed and 4 failed. Nine candidates were licensed by reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Tulane University (1920) (1921)	78, 87.1, 78, 79.3, 79.4, 79.5, 79.8, 80.3, 81.2, 81.3, 81.6, 82, 82.1, 82.1, 82.2, 82.2, 82.3, 82.5, 82.8, 83, 83.4, 83.6, 83.7, 83.9, 84.3, 84.5, 84.6, 84.8, 85.1, 85.3, 85.4 85.6, 85.6, 85.8, 85.8, 85.8, 86.1, 86.3, 86.3, 86.4, 86.7, 86.9, 87, 87.2, 87.5, 87.5, 87.6, 87.7, 88.1, 88.1, 88.1, 88.1, 88.6, 88.9, 89.3, 89.4, 89.4, 89.4, 90.6, 90.8	
Meharry Medical College (1921)		75.1, 75.3
Vanderbilt University (1919)		78
FAILED		
Tulane University (1921)		67.3, 73.8
Meharry Medical College (1912)	66.2, (1917)	49.3

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
University of Alabama (1902)		Mississippi
Atlanta College of Physicians and Surgeons (1902) (1904)		Mississippi Georgia
College of Physicians and Surgeons, Chicago (1903)		Illinois
University of Louisville Medical Department (1915)		Mississippi
University of Missouri (1898)		Missouri
University of Pennsylvania (1907)		Maryland
University of Tennessee (1915)		Arkansas
University of Texas (1920)		Texas

Social Medicine and Medical Economics

THE DOCTOR'S FEE

Some months ago, the trustees of the Johns Hopkins Hospital promulgated a regulation to the effect that $1,000 should be the maximum fee for any major operation performed in that institution unless under exceptional circumstances, and that the cost of professional services rendered by physicians should not exceed $35 a week, which should include at least three visits by the physician. The announcement created intense interest throughout the country and was widely commented on.

EASTERN OPINIONS

The New York *Tribune*, while recognizing the fact that the present system of fixing medical fees is economically unsound, points out that the fixing of a maximum fee is likely to establish that also as a minimum fee. There have been few abuses, it believes, under the present system, and it emphasizes that few physicians leave large fortunes. "The Baltimore ruling," it says, "seems at war with the spirit of benevolence which has so long marked the medical profession, and this spirit will not yield tamely." The New York *Telegram* adopts the same point of view, considering the matter one best left to the individual physician and beyond the scope of medical ethics. The New York *Times* emphasizes that the medical profession has been underpaid in the past and that the rewards are not commensurate with the service rendered. The New York *World* feels that the Johns Hopkins dictum "sets a standard equally for the protection of the patient and the guidance of the profession," and that "it is an action in keeping with the best traditions of American medical practice." The Boston *Herald* feels that the present methods of fixing fees are economically unsound, that charity rendered to the poor aids pauperization, and that the fixing of a fee limit will redound beneficially to the ethical instruction of medical students. The Boston *Post* believes, however, that the system of making the high fees of the wealthy pay for the service to the poor is an assessment of which the rich do not complain, and that lowering the fee to the wealthy will result in raising the fee to the poor. The Philadelphia *Inquirer* considers the incident as an attempt to establish a standard scale of charge and therefore a soundly economic one. The Brooklyn *Citizen* states that the action of the Johns Hopkins trustees may be taken as evidence that there has been medical profiteering, and believes that it will pay cities throughout the nation to investigate into the matter. The Baltimore *News* says that medical service is worth precisely what the man who receives it can afford to pay, and it makes the announcement an occasion for commenting on the iniquitous practice of passing patients from one specialist to another for the treatment of minor ills. It follows with a plea that the medical profession take the public more into its confidence. The Auburn, N. Y., *Citizen* considers that doctors' fees are reasonable without the necessity for restriction by authority. The editor points out that the medical profession is the servant of the public and that if high grade service is not forthcoming at reasonable rates, the public will become not charity patients but government patients, since the people will insist upon public hospitals employing adequate talent. The Watertown, N. Y., *Standard* and Oil City, Pa., *Derrick* believe that physicians should not be restricted in any way in the fixing of their fees, whereas the York, Pa., *Dispatch* believes that the suffering public will not voice any long and loud complaint over the Johns Hopkins dictum.

RESPONSE OF THE MIDDLE WEST

Turning to the Middle West, there is almost a unanimity of opinion that the medical profession may be trusted to give its public reasonable and honest consideration in the matter of fees. The Columbus, Ohio, *Journal* eulogizes the profession, stating that "very few ever succumb to commercial temptation and make their profession a mere means for getting money." The Indianapolis *News* points out that physicians are resenting not the amount at which fees are fixed but interference with their freedom. The traditional attitude of the profession is also emphasized. The Fort Wayne, Ind., *Gazette* considers the action at Johns Hopkins as little likely

to influence fees elsewhere in this country. The Toledo, Ohio, *Blade* fears that the fixing of fees is a first step toward state medicine, "which for every good point has a thousand bad ones." "Mankind, when it throws away an institution, adopts another that is worse," said a pessimistic Frenchman, and the *Blade* believes that, if the rest of the nation follows the plan of the Hopkins trustees, we shall be proving the truth of the Frenchman's assertion. The Grand Rapids, Mich., *News* concludes that it will be better to let conscience be the medical man's guide, and the Pontiac, Mich., *Press* considers the relation of physician to patient a most personal one, but hesitates to approve "a system which possibly leaves too much to the individual conscience when that conscience is a sort of elastic affair not controlled by high ethical standards or any fundamental conception of right and wrong." The Milwaukee, Wis., *Journal* states that no fee can balance the value of the doctor's work and that the best we can do is to cancel the obligation with gratitude. "The Johns Hopkins trustees," it says, "set themselves a hard task when they undertook to translate to figures in a ledger the value of a doctor's services." The Waukesha, Wis., *Freeman* also eulogizes the medical profession and states that "there is moral justification to the custom of physicians and surgeons to charge what their services are worth, founded mainly on the financial status of the patient." The Sioux City, Iowa, *Journal* takes a middle course and hesitates to enter into such a delicate controversy. The Dubuque, Iowa, *Times* believes that physicians would make a satisfactory income under the Hopkins dictum, because many physicians and surgeons whose practice is not among the wealthy and who have never received a fee as high as $1,000 from any patient managed to roll up yearly incomes which successful business men or lawyers would consider satisfactory. The Rockford, Ill., *Star* discusses the great cost in time and money of the present medical education, as well as the increasing growth of medicine as a humane profession, and states that "to fix the charge arbitrarily would affront that fine quality of service to humanity which must actuate those who could assist in alleviating bodily ills," and "it would seem that development of a professional conscience is more to be desired than the reduction of the matter of fees to the bleak simplicity of printed figures, as in an inexorable time table." The East St. Louis, Ill., *Journal* believes that physicians and surgeons are entitled to freedom in fixing fees, and points out that there is no compulsion on the part of patients in the choice of doctors.

WESTERN OPINION

In the West, also, editors defend the freedom of the medical profession. The Tacoma, Wash., *Ledger* does not wish to see doctors placed in the category of trade-unions. The medical profession is a charitable one; "regardless of possible remuneration, they give generously of their services and skill in emergency. It is ethical, perhaps it is just, that they should get their pay from those who are able to pay." The Globe, Ariz., *Record* considers the controversy an interesting one with justice on both sides, and states that the precedent is a challenge to other professions as well.

SOUTHERN VIEWS

The Washington, D. C., *Post* traces the history of previous attempts to fix medical fees, and states that they have resulted everywhere in signal failure. The New Orleans *Times-Picayune* considers the Johns Hopkins promulgation an evidence that there is profiteering among the medical profession, saying: "The public worm does not turn until sadly tread upon." It also wonders at the wide divergence between the $1,000 surgeon's fee and the $35 physician's fee. "As we have said," it continues, "we fear the worst, but it is at least well to know that the game is being played with some kind of a limit even if the blue chip does represent one thousand dollars." The Winston-Salem, N. C., *Journal* points out that the physician or the surgeon of the past has been a benevolent Robin Hood, and concludes that "graded prices, according to the means of the patients with an eye to justice to all, is obviously the desirable plan." The Dothan, Ala., *Eagle* and the Montgomery, Ala., *Advertiser* agree that the present method of varying charges according to income is the correct one, stating that otherwise the greatest of the professions would be the most underpaid. The Tuscaloosa, Ala., *News* follows the same trend, but emphasizes that the remuneration of the general practitioner is not proportionate to that of the specialist. The Atlanta, Ga., *Constitution* and the Savannah, Ga., *Press* believe that the vast majority of medical men can be trusted to be fair and just in their dealings. The Galveston, Texas, *News* believes that the public will approve of the Hopkins regulation, whereas the Louisville, Ky., *Times* is convinced that with our medical profession fees are secondary considerations. The Nashville, Tenn., *Tennessean* and the Morristown, Tenn., *Mail* believe that the question of a fee rightfully is one that should be left to the physician and his patient.

THE EDITORIAL CONSENSUS

On the whole, the editorial opinion of the United States has been against the arbitrary fixing of fees of physicians, either by hospitals or by any other authority. The announcement of the new Hopkins regulation has served well, however, to bring to light the highly complimentary opinion of our profession held by the editors of the country, and to cause them to announce their opinions in their editorial columns—an action which they might otherwise not have felt called on to take. What an outrage that a man should be compelled to expend the cost of a new set of tires for a life-saving operation or the cost of a single tire for one week of medical attendance.

Book Notices

DIAGNOSTIK DER KINDERKRANKHEITEN MIT BESONDERER BERÜCKSICHTIGUNG DES SÄUGLINGS. Eine Wegleitung für praktische Aerzte und Studierende. Von Professor Dr. E. Feer, Direktor der Universitäts-Kinderklinik in Zürich. Paper. Price, 40 marks. Pp. 275, with 225 illustrations. Berlin: Julius Springer, 1921.

In this volume is considered the diagnosis of diseases of infancy and childhood. The author finds that stress on signs and symptoms in infancy and childhood is of the greatest importance from the standpoint of clinical study and is also most instructive to the student. It is obvious that, in the case of the infants, only the objective symptoms are of importance, because it has not the power of intelligent vocal expression. In somewhat older children the same signs are of importance because the child has not sufficient judgment to interpret and express correctly his subjective feelings. In his long experience as a teacher, the author has found that it is of great value from the pedagogic standpoint to consider and analyze minutely the outstanding symptoms. Even after a diagnosis has been arrived at, he finds it instructive to reflect on the value of the single symptom or sign to ascertain whether or not a diagnosis may be established on such a finding. He thinks that the discussion of such points as these are of value to the student as well as to the practitioner; for example, he asks: Is swelling of the tibia sufficient evidence of late syphilis or does a Chvostek facial phenomenon indicate a spasmophilia or is a skin eruption of a certain kind sufficiently diagnostic of scarlet fever? The author attempts these discussions in his book. He brings out the points in differential diagnosis, and he draws from his long and rich experience in differentiating closely the various signs, and symptoms. He makes a strong plea for the simple and older methods of clinical examination. He says that owing to the great progress which medicine has made during the last decennium the vast amount of experience and skill which the older clinicians possessed is more or less neglected in the modern clinical examination. He thinks it is an important part of instruction to train the special senses of the examining physician. He has insisted on this point in his clinic, and has trained his assistants and his students according to this plan. In this way he thinks he has increased their diagnostic acumen and their powers of observation. The patient himself is observed and studied by the ordinary clinical methods first, and the aid of the laboratory is sought later to confirm and assist in the diagnosis. If a patient is brought to the clinic for suspected syphilis, the blood is not sent to the laboratory at once for a Wassermann examination, but an exhaustive physical examination is made first. The condition of every organ is carefully noted, and every sign and symptom receives careful thought and consideration, and after all this has been done, the Wassermann test is made.

The same is true in meningitis. Feer does not permit his assistants ordinarily to make a lumbar puncture at the outset, but he insists that a careful history be obtained and a thorough examination be made. After all this has been done, the lumbar puncture is performed.

In the text the author takes up a great number of signs and symptoms, and gives striking and valuable information as to their meaning and importance. In considering physiognomy and facial expression, he refers among other things to the significance of sudden pallor. He points out that in a case of bronchopneumonia a striking pallor is ominous. In a premature baby, if the normal rosy complexion suddenly changes to a waxy pallor, and the eyes are sunken, one should suspect a severe nutritional disturbance or a sepsis. In the same chapter he describes the face which is characteristic for infantile tuberculosis. The upper lip projects upward. The external nares are thickened and often ulcerated. The cheeks are spotted. Very characteristic is the unilateral conjunctivis with percorneal injection, with phlyctenules and photophobia. There are numerous descriptions of the facial expressions of the mongol, the idiot and the hydrocephalic infant. He also shows the photograph of a 4 months old baby with wrinkled forehead associated with wasting and vomiting. He considers the wrinkling of the forehead suggestive of pyloric stenosis. In considering the skin eruptions of the acute infectious diseases, he gives careful consideration to diagnosis and differentiation of the common exanthems. He considers at some length erythema infectiosum (megalerythem), which is not commonly treated in textbooks. At the onset the eruption consists of small, red macules which appear first on the face. It is characteristic of this eruption that the macules increase in size and coalesce to form a large red patch on the face. They occur also on the extensor surface of the arms and on the glutei. In treating of the examination of the lungs, he points out that in his opinion there are certain advantages in auscultating the thorax with the unaided ear, and that on account of the superficial breathing of young infants the real condition of the breath sounds and the presence of râles is most advantageously elicited if the baby cries. He presents a very thoughtful chapter on the diagnosis of appendicitis in infancy and young childhood, and in conclusion he remarks that in a doubtful case of appendicitis it would be better to open the abdomen than to wait too long, because while rupture of the appendix would confirm the diagnosis, it would also cost the life of the patient.

The material is well presented. The discussions are concise, and one is impressed by the fact that the matter presented represents the experience and thoughtfulness of a master. The illustrations are profuse and well made. We regret, however, that there are not a few colored plates to illustrate the acute infections and the color changes in the skin and nails.

ANATOMIE DES MENSCHEN. Ein Lehrbuch für Studierende und Aerzte. Erster Band: Bewegungsapparat. Von Hermann Braus, O.ö. Professor an der Universität; Direktor der Anatomie Heidelberg. Cloth. Price, 86 marks. Pp. 835, with 400 illustrations. Berlin: Julius Springer, 1921.

This is the first of four parts of a textbook of anatomy devoted especially to a study of the living body. It assumes familiarity through dissection with the parts, and teaches how these parts have been built together into a working machine. This part treats of the locomotor apparatus, including bones, joints and muscles; the second part will treat of the viscera; the third, the peripheral conducting apparatus, including vessels and peripheral nerves; the fourth part is to cover the skin, central nervous system and sense organs. This volume contains, first, a dedication to Fürbringer, von Kölliker and Boveri, former teachers of the author, and, secondly, an introduction of twenty-four pages considering (*a*) the field of the science of anatomy, (*b*) method for the practical study of anatomy, (*c*) the general form of the body, and (*d*) the constituent tissues. Then follows the main part of the volume, dealing with the structures serving locomotion. The facts commonly filling books on descriptive anatomy are mostly condensed into tables, and the text is devoted to an endeavor to elucidate the form and structure and working of these parts in the living body. Each part is briefly treated by itself and well illustrated. Then it is considered as part of the whole body. The manner of its mechanical working in combination with other parts is excellently studied. This is the outstanding feature of the volume. The subject is of fundamental interest and importance, but is dismissed with inadequate treatment in most textbooks. The sources of form are sought in the long past, during which we lived in our ancestors. The fundamental structure of vertebrates and especially of mammals is exhibited, and its modification in the human body shown. The cycle of changes from development to age is followed. The biologic view is a necessary foundation for such a study, and the dissection of cadavers only one of many means of making it. Observation of the living model, roentgenograms, moving pictures, palpation, percussion, observation of other animals, and comparison are among the means utilized throughout. The chief aim of the author has been synthesis: "Die Hauptaufgabe dieses Buches ist zu zeigen, wie die im Praktikum erforschten Teile sich zum lebendigen Gesamtbild zusammenfügen." It is well printed and well arranged. The table of contents is exhaustive and convenient. The subjects of paragraphs are indicated in the margins. The illustrations are new and beautifully executed. The book is indispensable to teachers of anatomy. Students and practitioners will find their study of anatomy under its guidance a source of keen interest, of pleasure and of help. The publication of succeeding volumes will be looked for with much interest.

TYPHUS FEVER WITH PARTICULAR REFERENCE TO THE SERBIAN EPIDEMIC. By Richard P. Strong, M.D., S.D., Director of the American Red Cross and International Sanitary Commissions to Serbia; George C. Shattuck, A.M., M.D., General Medical Secretary, League of the Red Cross Societies; Hans Zinsser, M.D., Professor of Bacteriology, Columbia University; A. W. Sellards, A.M., M.D., Assistant Professor of Tropical Medicine, Harvard University Medical School, and J. Gardner Hopkins, M.D., Bacteriologist of the American Red Cross Sanitary Commission to Serbia. Cloth. Pp. 273, with illustrations. Cambridge: Harvard University Press, 1920.

The first part (Strong) deals with the Serbian epidemic of typhus fever, with special reference to the measures for relief and prevention. The second part (Shattuck) is devoted to the clinical observations on typhus in Serbia in 1915. The third part (Sellards) contains a report on laboratory examinations in typhus fever, and the fourth part (Zinsser) is the report of the bacteriologist of the American Red Cross Sanitary Commission to Serbia. The book is of special interest to the practical epidemiologist.

INFANT-WELFARE WORK IN EUROPE. An Account of Recent Experiences in Great Britain, Austria, Belgium, France, Germany and Italy. By Nettie McGill. U. S. Department of Labor, Children's Bureau. Community Child-Welfare Series No. 1; Bureau Publication No. 76. Paper. Price, 20 cents. Pp. 169. Washington: Government Printing Office, 1921.

This pamphlet is one of the Children's Bureau monographs devoted largely to infant welfare work carried on in Great Britain, Austria, Belgium, France, Germany and Italy during the war. In the introduction, Sir Arthur Newsholme is quoted as saying that infant mortality figures are the most sensitive index we possess of social welfare and sanitary administration. The object of infant welfare work is to insure that each parent has within reach accurate counsel as to the hygiene of childhood and the general domestic conditions necessary to insure its maintenance. This involves the prevention, early discovery and prompt treatment of minor ailments as a means of preventing more serious diseases. One of the most effective means for such supervision is the infant welfare center, which was first established in France and has now spread to all civilized countries and has replaced the earlier milk stations. Prematernal, prenatal and obstetric care is also important; many detailed methods for securing these objects have been developed. A summary of conditions in the six countries engaged in the late war shows that in Great Britain a striking decrease in infant mortality took place during the first ten years of the present century with a further decline in the next five years. In the first year of the war, the death rate rose but in 1916, 1917 and 1918 fell again to normal. In 1916 it was the lowest ever reached in the three countries. Infant welfare work in Great Britian is now firmly established by law. In Austria, the infant death rate increased during the first year of the war, but later decreased. In Belgium, the infant death rate was decreasing at the beginning of the war. No nation wide figures are

given since 1912. In France, the infant mortality rate was decreasing at the beginning of the war. In 1914, the number in deaths per year per thousand live births was 109, which rose in 1915 to 141, fell in 1916 and 1917 to 122, and then rose again in 1918 to 138. In Germany, the infant death rate has been declining steadily for the last twenty years. It rose in 1912 to 147 infant deaths per thousand live births. In 1914 the rate was 164, in 1915, 154 and in 1915, 136, being a lower death rate in the third year of the war than the previous low point of 147 in 1912. In 1917, it rose again to 155. If these figures are correct, the infant mortality death rate, which we are told is the index of social and sanitary conditions, was lower in the third year of the war than it had ever been before in Germany. In Italy, a steadily falling death rate had in 1914 reached the point of 130, and in 1916 had risen to 166. No attempt is made in the pamphlet to summarize or compare the results in the different countries.

DISEASES OF CHILDREN FOR NURSES, INCLUDING INFANT FEEDING, THERAPEUTIC MEASURES EMPLOYED IN CHILDHOOD, TREATMENT FOR EMERGENCIES, PROPHYLAXIS, HYGIENE AND NURSING. By Robert S. McCombs, M.D., Instructor of Nurses at the Children's Hospital of Philadelphia. Fourth edition. Cloth. Price, $3 net. Pp. 538, with illustrations. Philadelphia: W. B. Saunders Company, 1921.

This textbook presents the subject in a clear and comprehensive form; it deals with each part of the anatomy, taking up in a brief and concise manner the disorders of the different systems. New topics included in this edition are dehydration; care of hernias; diseases of the spleen, bones and muscles, and the ductless glands; epidemic encephalitis; acidosis; intraperitoneal injections; the use of surgical solution of chlorinated soda, and the von Pirquet skin test. There is also a brief review on the recent progress in artificial feeding. The chapters on artificial feeding and therapeutics are particularly practical and helpful, as are also the diet lists for the different periods of infancy and childhood.

SURGICAL ASPECTS OF DYSENTERY, INCLUDING LIVER-ABSCESS. By Zachary Cope, B.A., M.D., M.S., Surgeon to Out-Patients, St. Mary's Hospital. Cloth. Price, $5. Pp. 157, with illustrations. New York: Oxford University Press, 1920.

An unusually extensive experience with dysentery has given the author an opportunity of handling a large number of the surgical complications. These comprise chiefly perforative lesions, peritonitis and liver abscess. The pathology is well handled, as is also the question of differential diagnosis between dysentery and other colonic lesions. I believe that the author is open to criticism, in using the aspirating needle in the diagnosis of liver abscess. The operative treatment of perforative peritonitis and liver abscess is well presented. The value of the work in the practice of surgery in a temperate climate consists chiefly in indicating some of the diagnostic possibilities in obscure lesions of the colon.

OUTWITTING OUR NERVES. A Primer of Psychotherapy. By Josephine A. Jackson, M.D., and Helen M. Salisbury. Cloth. Price, $2.50. Pp. 403. New York: The Century Company, 1921.

The authors of this book attempt a simple, comprehensive presentation of Freudian principles. The book is written in a chatty, feminine style with a somewhat condescending tone frequently adopted by those trying to make a scientific subject intelligible to the layman. Except for this defect in style, the material presented is solid, fairly accurate and quite intelligible. Each chapter is accompanied by a well-prepared summary. There are references to suitable literature, and the cases cited are practical and not sensational. On the whole, this volume appears to be one of the best thus far prepared for presenting the difficult subject of mental medicine to the layman.

ORGANIC DEPENDENCE AND DISEASE: THEIR ORIGIN AND SIGNIFICANCE. By John M. Clarke, D.Sc., LL.D., New York State Paleontologist. Cloth. Price, $3. Pp. 113, with illustrations. New Haven: Yale University Press, 1921.

Many physicians will be interested in reading about the results of investigations into life conditions in their earliest appearances. The discussion of the fate of the dependent races of life, to which many pathogenic microbes belong, is stimulating as well as illuminating, showing that "the clue to human destiny and social adjustment lies concealed in the rocks at our feet" in greater measure than many suspect.

Medicolegal

States May Enact Antinarcotic Laws

(State of Minnesota v. Martinson (U. S.), 41 Sup. Ct. R. 425)

The Supreme Court of the United States affirms a judgment of the Supreme Court of Minnesota which sustained one construing the statute of that state as making it unlawful for a physician to furnish certain narcotic drugs to habitual users out of stocks kept on hand by himself, which statute one Whipple was convicted of violating. The Supreme Court of the United States says that the grounds of attack on the statute were based on an alleged deprivation of federal rights, it being contended: first, that the statute exceeds the authority of the state in the exertion of its police power, in that it undertakes to regulate a lawful business in the manner prescribed in the statute, in violation of the fourteenth amendment to the Constitution of the United States, and secondly, that the statute conflicts with the terms and provisions of the federal Harrison Narcotic Law, and is therefore beyond the power of the state to enact.

There can be no question of the authority of the state in the exercise of its police power to regulate the administration, sale, prescription and use of dangerous and habit-forming drugs, such as are named in the statute. The right to exercise this power is so manifest in the interest of the public health and welfare that it is unnecessary to enter on a discussion of it beyond saying that it is too firmly established to be successfully called in question.

As to the alleged inconsistency between the state statute and the Harrison Narcotic Law, the state court held that there was no substantial conflict between the two enactments. The validity of the Harrison act was sustained by this court in *United States* v. *Doremus*, 249 U. S. 86, 39 Sup. Ct. 214, as a valid exercise of the authority of Congress under the power conferred by the constitution to levy excise taxes. The provisions of the state regulating the sale, dispensing or prescribing of drugs were held to bear a reasonable relation to the collection of the taxes provided for, and to be valid, although the statute affected the conduct of a business which was subject to regulation by the police power of the state.

It may be granted that the state has no power to enact laws which will render nugatory a law of Congress enacted to collect revenue under authority of constitutional enactments. But this court agrees with the state court that there is nothing in this statute which prevents Congress from enforcing the revenue act in question. It is true that the provisions regulating the sale, dispensation and disposition of the prohibited drugs are somewhat different in the two acts. The prohibitory measures of the federal statute do not apply to the disposition and dispensation of drugs by physicians registered under the act in regular course of professional practice, provided records are kept for official inspection. Under the state law, physicians can only furnish prescriptions to addicts, and may not dispense the drugs to such persons at pleasure from stocks of their own. There is certainly nothing in this state enactment, as construed by the Supreme Court of Minnesota, which interferes with the enforcement of the federal revenue law, and this court agrees with the state court that there is no conflict between the enactments such as will prevent the state from enforcing its own law on the subject.

Epidemic (Lethargic) Encephalitis Following Bumping of Head

(Donovan v. Alliance Electric Co. et al. (N. Y.), 186 N. Y. Supp. 813)

The Supreme Court of New York, Appellate Division, Third Department, holds that an award of the state industrial commission under the workmen's compensation law where epidemic encephalitis (sleeping sickness) followed a bumping of the head of the claimant should be reversed, and the commission be directed to compensate the claimant for the injuries to his head, and not for the disease which was not shown to have resulted from the injury. The court says that it was unable to find evidence justifying the conclusion that a man whose head was bumped, and who subse-

quently developed epidemic encephalitis, was entitled to compensation for such sickness. Neither the constitution of the state, amended to permit of the workmen's compensation law, nor the statute, contemplates payment for diseases which are not the natural and unavoidable result of accidental injuries. The wholly undisputed testimony of a physician was to the effect that epidemic encephalitis is not the result of trauma, but of infection, and his testimony was that the fact that the claimant developed epidemic encephalitis following the bump on his head was merely a coincidence. Nor was it the finding of the commission that the disease was caused by the accident, but was in the disjunctive, that the disease was "caused or activated by the injury," which, of course, was not a finding that it was "such disease or infection as may naturally and unavoidably result" from the injury. Moreover, it is generally understood that an infection does not result from a mere bump, in any event. The alleged fact that the claimant never had any previous illness was not evidence that he would not have had epidemic encephalitis if this accident had never happened. The purpose of the statute, as sanctioned by the amendment of the constitution, was to provide compensation for industrial accidents, for accidents inherent in the modern system of production, and not for the pensioning of those who suffered from disease not caused by such accidents. The theory of the law is that the accidents of an industry are proper overhead charges, and the effort of the commission to impose the burden of infectious disease on the industrial life of the state ought not to receive the sanction of this court.

Authority of State Department of Health

(State Department of Health v. San Miguel County (N. M.), 195 Pac. R. 805)

The Supreme Court of New Mexico, in holding that it was error to dismiss the petition of the state department of health, which sought to recover for services rendered and materials furnished by it to San Miguel County in the performance of health work and the enforcement of health laws and rules, says that the sole question involved was the authority of the state department to act when the county commissioners did not appoint a health officer whose appointment was approved by the department. The approval of the state department of health is a prerequisite to invest the nominee for county health officer named by the board of county commissioners of a county with authority, and without such approval there can be no such officer qualified to act. The disapproval by the state department of health of the nominee for county health officer, and the failure, neglect or refusal to nominate one who is approved by the state department of health constitutes a failure, neglect and refusal of the local health authorities to do the work which Chapter 85, Laws of New Mexico of 1919, designates shall be done by the state department of health, and authorizes the state department of health to perform such work at the expense of the county.

Testimony as to Pus Three Months After Injury

(Schuh v. Oil Well Supply Co. et al. (Calif.), 195 Pac. R. 703)

The District Court of Appeal of California, First District, Division 1, says that, in this action brought to recover damages for personal injuries, a physician, who had not examined the plaintiff until about three months after his injury, was asked to tell the jury in what condition he found the plaintiff's arm the first time he examined it. Over a general objection, he replied that he found the wound discharging both serum and pus and some blood with a foul odor, and that on probing the sinus he had discovered a spicule of dead bone, but he could not say that the condition he found was part of or resultant from any improper treatment prior to the time that the plaintiff came to him. The part of the answer referring to the pus condition was attacked on the ground that the proper foundation had not been laid for the question in that it had not been shown that the pus condition might not have resulted from the carelessness of the plaintiff or some of his attendants; but the court holds that the evidence was competent, though whether or not this condition was one of the natural consequences of the accident was a question for the jury.

Society Proceedings

COMING MEETINGS

Amer. Acad. of Ophthal. and Otolaryngology, Philadelphia, Oct. 17-22.
Amer. Assn. of Obst., Gynec. and Abdom. Surgs., St. Louis, Sept. 20-22.
American Association of Railway Surgeons, Chicago, Oct. 18-20.
American Child Hygiene Association, New Haven, Conn., Nov. 2-5.
American College of Surgeons, Philadelphia, Oct. 24-28.
American Roentgen Ray Society, Washington, D. C., Sept. 27-30.
Colorado State Medical Society, Pueblo, Oct. 5-7.
Idaho State Medical Association, Twin Falls, Oct. 6-7.
Indiana State Medical Association, Indianapolis, Sept. 28-30.
Kentucky State Medical Association, Louisville, Sept. 19-22.
Medical Association of the Southwest, Kansas City, Mo., Oct. 25-28.
Mississippi Valley Medical Association, St. Louis, Oct. 13-15.
Missouri Valley, Medical Society of the, Kansas City, Mo., Oct. 25-28.
New England Surgical Society, Worcester, Mass., Sept. 21-22.
Pennsylvania, Medical Society of the State of, Philadelphia, Oct. 3-
Vermont State Medical Society, St. Albans, Oct. 13-14.
Virginia, Medical Society of, Lynchburg, Oct. 18-21.

MINNESOTA STATE MEDICAL ASSOCIATION

Fifty-Third Annual Session, held at Duluth, Aug. 24-26, 1921

The President, DR. C. EUGENE RIGGS, St. Paul, in the Chair

Anaphylaxis to Food Proteins in Breast-Fed Infants and Its Probable Relation to Certain Diseases of the Nursing Infant, Especially Exudative Diathesis

DR. W. RAY SHANNON, St. Paul: Egg and veal protein may appear in the breast milk after their ingestion by nursing mothers. Colic, vomiting, diarrhea, repeated respiratory infections, milk crust, seborrhea and eczema in breast-fed babies are often the result of allergic reactions to foods coming to the infant through the breast milk. In the cutaneous tests on infants, the erythematous reaction is more common than the wheal and therefore more important. Sensitization often is multiple and may be to a majority of the foods in the mother's dietary. The repeated exacerbations of eczema may be due to newly acquired sensitization to foods the mother eats. The manifestations of exudative diathesis are the result of anaphylactic reactions to food proteins in the mother's dietary, and not a result of fat intolerance, in the majority of cases.

Circulatory Disturbances of the Feet

DR. EMIL S. GEIST, Minneapolis: The treatment is largely symptomatic, but careful attention often relieves the patient of pain. Sodium nitrite and potassium iodid may be tried. Alternate hot and cold foot baths often relieve and are of great value. Woolen stockings for day and night are to be recommended. Abstinence from coffee and tobacco is important. Heliotherapy is followed by good results in some cases. Rest to the feet is, of course, indicated.

The Treatment of Tuberculosis of the Spine

DR. WALLACE H. COLE, St. Paul: The treatment of tuberculosis of the spine in children should be routinely conservative, operative therapy being only occasionally indicated. The treatment in adults should be more radical. Operative measures are merely complementary to and do not replace the older classical methods of treatment, the underlying principle remaining always the same. The actual tuberculous infection remains for many months or years in the vertebrae, and it is probable that the operative fixation of the spine does not hasten its elimination more than the proper conservative methods.

Urinary Lithiasis in Children

DRS. GILBERT J. THOMAS and CHESTER O. TANNER, Minneapolis: Urinary lithiasis is frequent in childhood and infancy, the average occurrence in the three large series reported being 43 per cent. The average age is 7.8 years. The youngest patient in this series was 10 months old. We are unable to determine the etiology of urinary stones in infants, although infection is one of the factors. In 21 per cent. of our cases, stones were found in the kidney or ureters. The comparison of right kidney to left is as 21 to 8. Only 8 per cent. were arrested in the ureter. Sixty-nine per cent. of stones were found in the urethra or bladder. A large num-

ber of these had their origin in the kidney. The symptomatology in the order of occurrence is: (1) pain and colic; (2) hematuria; (3) frequency; (4) pyuria; (5) dysuria, and (6) nausea and vomiting. Cystoscopic examination can be made in very young infants. The infant ureter is proportionately large, is capable of great distention, and facilitates the easy passage of stone. The diagnosis is made from the following positive findings: (1) roentgen ray (55 per cent.); (2) urinalysis (52 per cent.); (3) cystoscopy (33 per cent.), and (4) clinical findings alone (11 per cent.). Surgery is indicated when stones do not progress through the urinary tract. Seventy-eight per cent. of operations were done on the bladder and urethra. When renal stones are bilateral, surgery should be carefully considered. The prognosis is unusually good. In this series, there were two deaths, one with bilateral stones, the other occurring in conjunction with urinary malformation; 50 per cent. were reported cured; 2.5 per cent. had recurrence of symptoms, and 47 per cent. were not reported. Urinary stone in children may remain symptomless for many years. In one of our patients, ureteral or bladder stone had been present for eight years with slight symptoms. Stones discovered during adult life may have their beginning during childhood or infancy.

Suspension and Traction in Treatment of Fractures of Extremities

DRS. A. W. IDE and B. I. DERAUF, Brainerd: Although suspension and traction treatment has been used for several decades, it is only during and after the recent war that there has been some standardization of the method. Reduction can easily be maintained and earlier restoration of function is obtained. Extension may be obtained by either skeletal or skin traction. Massage and passive motion should be started as early as is consistent with immobility of the fracture.

Cystocele and Prolapse

DR. ROBERT EARL, St. Paul: The uterus is maintained at its normal level in the pelvis by its ligaments. Because of the elasticity of these ligaments, it has a considerable range of motion. The pelvic diaphragm when in normal condition prevents the intra-abdominal pressure from stretching the supporting ligaments of the uterus. Any operative procedure for the cure of prolapse or cystocele should aim to restore to as nearly a normal condition as possible the normal supports of the uterus and bladder. The alteration of the normal relationship of the pelvic organs or their fixation to the abdominal wall should be measures of last resort.

Treatment of Pericarditis with Effusion

DR. CARL A. HEDBLOM, Rochester: Pericarditis with effusion occurs most frequently in association with acute rheumatism. In children, pericarditis usually follows pulmonary or pleural infection. The most characteristic symptoms are increased precardiac dulness, feeble or absent heart sounds, absent apex impulse, small rapid pulse, dyspnea and cyanosis. Exploratory pericardiocentesis may be necessary to establish the diagnosis of the presence of fluid and its nature. Exploratory pericardiocentesis with a short hypodermic needle which infiltrates the tissues with procain as it enters is as simple and painless, and will probably prove equally as harmless as exploratory aspiration of the pleural cavity. The point of election for aspiration seems to be in the region of the left mammary line, fifth interspace, just inside the left border of dulness. In case aspiration here is negative, alternate points are beneath the xiphoid process (Marfan) at the left sternal border and at the right sternal border in the fifth interspace. A negative aspiration at any one point, especially at the left sternal border, does not exclude the presence of fluid. A serous effusion is usually sterile, but it may be infected. A purulent exudate is usually infected, but it may be tuberculous or secondary to malignant disease. Preliminary partial evacuation of any exudate may probably be accomplished during exploration through an aspirating needle and a small syringe. A sterile exudate, except the persistently recurring type, should be evacuated by aspiration through a small, short needle. An infected exudate should be evacuated by pericardiotomy after preliminary resection of the cartilage, in order to secure wide open dependent drainage. If the patient is critically ill, a bedside operation under local anesthesia is especially indicated. Knife section of the cartilage obviates the necessity of freeing it from underneath before it is resected.

Potter Version

DR. W. A. COVENTRY, Duluth: Our observations and those of others have been that Potter version, with proper kneading out of the perineum, does protect the maternal soft parts. The morbidity is decidedly lessened on account of the fact that the patient is saved the second stage of labor and the fatigue that goes with it, so that she is better able to resist infection.

Principles Governing the Treatment of Fractures

DR. E. K. GREEN, Minneapolis: Union is best obtained in the presence of a certain amount of mobility. Alinement is obtained only by studying the mechanics and properly applying extension, counterextension, etc. Complete reduction can be obtained only by sufficient weight properly applied.

Painful Scars

DR. J. E. CORBETT, Minneapolis: Surgeons should pay more attention to nerve supply and conserve nerves when possible. Blood vessel ligatures should not include nerves. In cases of amputation or whenever a nerve must be cut, the proximal part of the nerve should be injected with alcohol with the purpose of preventing neuromas. In all operations on nerves associated with pain, watch must be kept for neuromas in small, unimportant nerves. Neurologic examination may reveal nerve lesions in patients presenting themselves for reoperation for adhesions, etc. After alcohol injection of a nerve, the nerve stump should be so planned that it will not be subject to irritation.

Marginal and Jejunal Ulcers Following Gastro-Enterostomy

DR. F. C. SCHULDT, St. Paul: Following gastro-enterostomy, a long period of prophylaxis should be carried out. Although the question of the suture is still in the balance, it is advisable to discontinue the use of nonabsorbable suture material. One factor in the etiology of jejunal ulcer lies in the new physiology of acid chyme impact, on mucous membrane with alkaline habits.

The Clinical Estimate of Myocardial Damage

DR. S. M. WHITE, Minneapolis: Auricular fibrillation with its absolute irregularities of time and force of ventricular contraction provides an extreme illustration of the fatigue which may result in the heart because of extreme irregularities, and the pulse deficit (that is, the failure of a certain number of pulse waves to be appreciable at the radial artery) is indicative of the extent to which ineffective ventricular contractions have occurred. Many cases of acute decompensation are due in large part to the increased rate and the irregularity of the ventricles in auricular fibrillation.

Tachycardias, of whatever origin, when the rate is high enough, result commonly in exhausation of the heart muscle, and many instances of paroxysmal tachycardia of from twenty-four to forty-eight hours' duration or longer have been reported and several have been observed by the author in which clinical symptoms and signs of decompensation have occurred, to clear up promptly on the cessation of the tachycardia. It is not possible for the heart muscle to change its character in so short a time, and it can only be that the increased rate of the heart itself, probably accompanied by temporary nutritional changes, have been responsible for the temporary decompensation.

Blastomycosis: Clinical Pathology and Therapeusis

DR. BENJAMIN F. DAVIS, Duluth: In the treatment of any form of blastomycosis, certain general measures are worthy of consideration. As in the tuberculous, fresh air, rest and good food are of prime importance. This is especially true of the generalized cases. Certain drugs have been found of benefit. Potassium iodid by mouth in large doses has for years been routine in certain clinics with good results. Arsphenamin, intravenously, has given marked benefit in some cases, while from South America come reports of the efficiency of tartar emetic given intravenously. In cases of

cutaneous blastomycosis, in addition to general measures, clean surgical excision is a logical procedure when the lesion is so situated that serious mutilation will not be thus produced.

Results in the Treatment of Inflammatory Diseases of the Gallbladder and Its Ducts

DR. ORVILLE N. MELAND, Warren: The prognosis of cases following operative interference on the gallbladder and biliary tract is dependent on the group in which the patient falls. Those patients complaining of acute attacks of pain or a dull aching pain under the right costal border are practically always cured or benefited, and in case of recurrence of symptoms, they can be reoperated on with a good reassurance of recovery. However, one third or more of patients in whom symptoms are mainly gastric may return with the identical symptoms; and in those patients who come back and tell us how bad they feel after operation, we cannot recommend any further surgical interference with any degree of success.

Hysterical Dysphagia

DR. PORTER P. WILSON, Rochester: Although hysterical dysphagia is a functional disorder, the prolonged unbalanced diet gives rise to enlargement of the spleen and secondary anemia. Normal deglutition can be restored by passing an esophageal sound. Recurrences are liable to occur, but can be relieved by further passage of sounds and by constantly reassuring the patient. When normal deglutition is restored, the blood picture returns to normal, and the splenic enlargement subsides. Hypothyroidism may develop after the patient begins to swallow freely, owing to the inability of the thyroid to furnish secretion enough to care for the increased food intake.

Vital Capacity of the Lungs in Cardiac Disease

DRS. HENRY L. ULRICH and MORRIS H. NATHANSON, Minneapolis: The vital capacity of the lungs is found to be definitely reduced in cardiac disease when there is evidence of functional impairment. Vital capacity studies aid in differentiating cardiac dyspnea from other types. The reduction in vital capacity runs parallel to the impairment of heart function. The most reasonable explanation of the reduced vital capacity is on the basis of a physical change in the lung tissue due to an altered pulmonary circulation. Vital capacity studies are of practical aid in cardiac disease in diagnosis, prognosis and treatment.

Manifestations of the Spasmophilic Diathesis in Older Children

DR. C. A. SCHERER, Duluth: While the chemistry of the blood may not reveal changes in the calcium content, there is a hyperexcitability of the nervous system which can be shown by the electrical reactions. The condition is relieved by the use of liberal doses of calcium, combined with cod liver oil. The determination of the electrical reactions is a simple procedure, and the results obtained justify the further study of the condition.

Epidemic of Paratyphoid Fever Among University Students

DR. C. A. MCKINLAY, Minneapolis: In an epidemic of approximately 106 cases of paratyphoid fever among students, the clinical features were those of typhoid fever with variation in the occurrence of herpes about the lips in several cases, with unusually numerous and large rose spots, with comparatively sudden onset, and with frequent profuse sweating, intermittent fever and often quite rapid lysis of fever. Complications were present in about 4 per cent. of the cases, and the mortality rate was about 2 per cent. Infection probably occurred through the contamination of bulk milk by carriers. Vaccination from one to three years previously did not confer immunity in the twenty individuals who had been previously inoculated with triple vaccine, or appreciably alter the course of the disease.

Referred Pain in Heart Disease

DR. CHARLES N. HENSEL, St. Paul: Pain is a frequent finding in heart disease independent of angina pectoris. Pain is a warning signal of an improperly functioning organ, and in this sense is a protective reflex. Pain is not felt in the heart but is a referred pain, through the afferent sympathetic fibers from the heart to the spinal cord and out along the contiguous sensory and motor spinal nerves. The distribution of the contiguous sensory and motor segments is to the body wall of neck, shoulder, chest, arm and hand. Constant afferent stimuli to the spinal cord may cause an area of hyperirritability in the cord constantly stimulating sensory and motor segments. There result areas of pain and tenderness in skin and body wall which are frequently diagnosed as intercostal neuralgia, muscular rheumatism or neuritis. These pains are protests from an overworked, engorged, inflamed, underfed or decaying heart. Pain similar to angina pectoris may arise from the heart rather than the aorta; consequently, all pains in these areas demand investigation of the cardiac function. If the result of the cardiac examination is doubtful, treatment of a laboring heart will often bring relief.

Carcinoma of the Lung

DR. MOSES BARRON, Minneapolis: Carcinoma of the lung is a rare disease, but its rarity is exaggerated by the nonrecognition of many of those cases that do occur. It is only through necropsy that many are revealed. Carcinoma of the lung is a diagnosable disease clinically. However, a diagnosis is possible only when careful and detailed histories are taken and accurate physical examinations are made. Laboratory and roentgenographic studies may also be helpful. All facts obtained must be carefully correlated. Statistics show that complete examinations of the patients have in the hands of certain practitioners resulted in correct clinical diagnosis in from 80 to 95 per cent. of the cases. This disease is apparently increasing in frequency, especially during the last few years. Chronic inflammations, such as tuberculosis, are factors in the etiology of the disease. The last great influenza epidemic is perhaps another factor. The average incidence has been about 2 per hundred necropsies. In our series during the last few years the increase has been about fourfold. The disease has formed about 2 per cent. of the cases of cancers seen at the postmortem studies. Most pulmonary carcinomas develop from the bronchial epithelium. Some originate from the bronchial mucous glands and only a few arise from the alveolar epithelial cells. Epithelial metaplasia is relatively common in bronchial mucous membrane. This may explain the origin of the comparatively large number of squamous cell carcinomas in this region. Metastases are common in this disease and often are numerous. The frequency of secondary tumors to the brain, suprarenal and thyroid is very striking. Pain in the chest, cough and dyspnea occur early. Bloody sputum, cornage and asymmetry of the chest are important findings in these cases. Laboratory procedures and roentgenologic studies have thus far not proved of great assistance in the differential diagnosis. Bronchiectasis is an important complication, especially since it may give misleading physical and roentgenologic findings during the course of the disease. The study of the thirteen cases reported in this paper shows the importance of assuming a new attitude toward this disease with reference to its prevalence and diagnosability. The two cases encountered at the University Hospital during the last year were both recognized clinically; but ten of the remaining eleven of this series were not diagnosed correctly. This fact points strongly to the necessity of greater familiarity with the signs, symptoms and pathology of the disease.

Etiology and Laboratory Diagnosis of Actinomycosis

DRS. ARTHUR H. SANFORD and THOMAS B. MAGATH, Rochester: We wish to emphasize that actinomycosis, while an uncommon disease, is not so rare as many imagine. In a patient with an acute or subacute infection of the cervicofacial region, especially if there has been dental trouble on the affected side, or a history of definite injury, this disease must be suspected. A differential diagnosis must also be made in those types of abdominal lesions in which a sinus persists after drainage of an abscess. The careful examination of the discharge in either type of case for characteristic sulphur bodies will lead to the correct diagnosis clinically, which is readily substantiated by simple laboratory procedures. While the biologic characteristics of the causative organism and its place in the vegetable world has been defined, the etiologic factors concerned in the production of infection in man or beast are not known. It is still of interest to report accurately all details regarding cases of actinomycosis and thus stimulate further research in the life history of *Actinomyces*.

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Current Medical Literature

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Gynecology, St. Louis

August, 1921, **2**, No. 2

American Gynecology. W. W. Chipman, Montreal, Que.—p. 119.
Unsolved Problems in Gynecology and Obstetrics. W. B. Bell, Liverpool, England.—p. 130.
Frequency and Cause of Abortion. A. W. Meyer, Palo Alto, Calif.—p. 138.
*Spontaneous Evolution Following Transverse Presentation of Fetus. M. Marshall, Pittsburgh.—p. 152.
*Significance of Pelvic Outlet in Perineal Lacerations, Cystocele, and Prolapse. A. Morse, New Haven, Conn.—p. 159.
*Postoperative Tetany Due to Sodium Bicarbonate. W. P. Healy, New York.—p. 164.
Drainage of Pus-Forming Lesions of Abdominal Cavity. J. W. Kennedy, Philadelphia.—p. 170.
Use of Iodin in Preparation of Women for Delivery. B. Lankford, Norfolk, Va.—p. 176.
Behavior of Uterus in Eclampsia: Case Report. M. P. Rucker, Richmond, Va.—p. 179.
Two Cases of Fimbrial Cysts: One with Twisted Pedicle and Gangrene Complicating Pregnancy and One Simulating an Ectopic Gestation. H. Cohen, New York.—p. 184.
Histologic Study of Fetus and Implantation Site in Case of Missed Abortion. J. P. Greenhill, Chicago.—p. 188.

Spontaneous Evolution in Transverse Presentation.—The case reported by Marshall was the only one occurring in a total of about 3,500 deliveries at or near full term. He says that spontaneous evolution is so rare that it cannot be relied on to solve the problem of a fetus presenting transversely and impacted. The only accurately described mechanism of this delivery is that of Douglas, which was the type observed in this case.

Study of Pelvic Outlet.—In 100 women presenting perineal laceration, cystocele, or prolapse, mensuration of the pelvis demonstrated a bony outlet of normal dimensions in seventy-nine and a typical funnel pelvis in twenty-one. Of the seventy-nine women with a normal outlet, sixty, or 76 per cent., showed a cystocele or prolapse as the outstanding lesion, while in nineteen, 24 per cent., a perineal laceration was unassociated with these conditions. Of the twenty-one women in whom a funnel pelvis was diagnosed, lesions of the structures in the anterior half of the pelvic diaphragm were present in but seven, or 33 per cent. In fourteen, or 67 per cent., a plastic operation was necessary upon the perineum only. The significance of the forceps operation in the production of injuries to the supporting structures in the anterior portion of the pelvic floor is emphasized. Of nineteen women in whom the outlet was normal and unassociated with cystocele or prolapse, but, four, or 21 per cent., had been delivered by this procedure. On the other hand, of the sixty women with the same type of outlet, but presenting these lesions, twenty-four, or 40 per cent., gave a history of one or more labors terminated instrumentally. Cystocele or prolapse was most frequently found in women possessing an inferior strait of such dimensions that there could be no disproportion between a normal-sized, well-fixed head and the pubic arch. This association is attributable to the fact that as the occiput passes closely beneath the symphysis damage to the supporting structures occurs, predisposing to descent of the bladder and uterus.

Postoperative Tetany Due to Sodium Bicarbonate.—In the seven cases reported by Healy symptoms of tetany in its varied manifestations occurred after celiotomy for operations on the pelvic viscera. Onset of the typical hand symptoms was observed as early as seven hours after operation and the symptoms terminated within forty-eight hours after operation in each case—either in response to treatment ,or by the death of the patient. There were four deaths and three recoveries. The patients received nitroux oxid and ether anesthesia administered by a specialist and the operations were done by four different surgeons. The last three patients recovered after the administration of calcium lactate by mouth. In one of these cases, the symptoms had been present twenty hours before the calcium lactate, with lime water, was given. These cases occurred irregularly over a period of four months. The symptoms in the fatal cases were tachycardia, profuse diaphoresis, hyperpyrexia, epigastric distress, bilateral, symmetrical spasms and contractions of muscles, especially of the upper extremity, and convulsions. The source of trouble was apparently finally traced to the glucose and sodium bicarbonate enema administered as a routine in most of the major operation cases. This was supposed to contain 5 per cent. glucose and 5 per cent. sodium bicarbonate in eight ounces of water at a temperature of from 100 to 110 F. It was given as soon as possible after the return of the patient from the operating room, and was repeated again in four hours. The first enema also contained forty grains of sodium bromid. Through an error in calculation, 1,200 grains of sodium bicarbonate was given with enema instead of 180 grains; and enough of this was absorbed in a short time to upset the normal relations between the sodium, potassium, calcium, and other ions in the neuromuscular tissues, resulting in the symptoms described.

American Journal of Ophthalmology, Chicago

August, 1921, **4**, No. 8

Typical Siderosis of Crystalline Lens. No Clinical Evidence of a Splinter of Iron. D. Van Duyse and M. Danis.—p. 561.
Etiology of Chronic Meibomitis. S. R. Gifford, Omaha.—p. 566.
Some New Tests for Astigmatism. E. E. Maddox, Bournemouth, England.—p. 571.
Dirciform Keratitis Secondary to Smallpox. H. K. Fleck, Baltimore.—p. 573.
Ocular Disturbances in Encephalitis Lethargica. P. J. Waredenburg, Arnheim, Holland.—p. 580.
Ocular Manifestations in Encephalitis Lethargica. G. I. Hogue, Milwaukee.—p. 592.
Barraquer Intracapsular Cataract Operation. A. S. Green, San Francisco, and R. P. Luna, Guatemala, C. A.—p. 595.
Simplified Intranasal Operation for Obstruction of Nasolacrimal Duct. R. H. Good, Chicago.—p. 597.
Subconjunctival Dislocation of Crystalline Lens. G. C. Albright, Iowa City, Ia.—p. 601.
Point in Technic of Iodin Treatment of Corneal Ulcers. H. Gifford, Omaha.—p. 604.
Illuminated Test-Card Holder for Near. A. Cowan, Philadelphia.—p. 604.
Magnetized Knife to Extract Small Magnetic Foreign Bodies from Anterior Chamber. J. M. Patton, Omaha.—p. 605.
Bilateral Dislocation of Crystalline Lens; Removal. W. G. Putnam, Yarmouth, N. S.—p. 605.

American Journal of Physiology, Baltimore

Aug. 1, 1921, **57**, No. 1

Physiologic Action Currents in Phrenic Nerve. Application of Thermionic Vacuum Tube to Nerve Physiology. H. S. Gasser and H. S. Newcomer, St. Louis.—p. 1.
Output of Heart in Dogs. G. N. Stewart. Cleveland.—p. 27.
Secretion of Pars Pylorica Gastrica. A. C. Ivy and Y. Oyama, Chicago.—p. 51.
Studies in Nutrition. IX. Nutritive Value of Proteins from Chinese and Georgia Velvet Beans. A. J. Finks and C. O. Johns, Washington, D. C.—p. 61.
Mechanism of Recovery or Maintenance of Systemic Blood Pressure After Complete Transaction of Spinal Cord. A. B. Yates, Cambridge, Mass.—p. 68.
*Effect of Hemorrhage on Sympathetic Nerves. H. McGuigan and H. Atkinson, Chicago.—p. 95.
Changes in Concentration of Carbon Dioxid Resulting from Changes in Volume of Blood Flowing Through Medulla Oblongata. A. B. Hastings, H. C. Combs and F. H. Pike, New York.—p. 104.
Action of Neutral Isotonic Salt Solutions in Sensitizing Arbacia Eggs to Activating Influence of Hypertonic Sea Water. R. S. Lillie and M. L. Baskervill, Cleveland.—p. 110.
Is Catalase a Measure of Metabolic Activity? S. Morgulis, Omaha.—p. 125.
*Influence of Glands with Internal Secretion on Respiratory Exchange. II. Effect of Suprarenal Insufficiency in Rabbits. D. Marine and E. J. Baumann, New York.—p. 135.
Studies on Neuromuscular Transmission. I. Action of Procain on Muscle Nuclei. J. F. Fulton.—p. 153.
Types of Oscillations in Diaphragm Muscle. L. B. Nice and A. J. Neill, Norman, Okla.—p. 171.

Effect of Hemorrhage on Sympathetic Nerves.—McGuigan and Atkinson assert that hemorrhage in many cases sensitizes or stimulates the sympathetic system governing vascular tone. By the use of drugs that are known to stimulate or depress the centers and which have a lesser or no effect on the periphery, it is shown that the greater influence of the hemorrhage on the vasomotor mechanism is peripheral.

Effect on Metabolism of Removing Suprarenals.—Marine and Baumann found that removing or crippling (by freezing) the suprarenal glands in rabbits causes a disturbance in metabolism, usually characterized by increased heat produ-

tion and carbon dioxid output. This disturbance appears definitely related to the completeness of removal of the cortical function. The symptom complex including both anatomic and physiologic data which results from the destruction of the suprarenal function in rabbits resembles in many essential features the symptom complex of exophthalmic goiter.

American Journal of Public Health, Chicago

August, 1921, **11**, No. 8

Labor Camp Sanitation; Basis for Education and Citizenship. R. J. Miller, San Francisco.—p. 697.
Bactericidal Action of Water Treated by Ultra Violet Rays. W. F. Walker, Detroit.—p. 703.
Functions and Relationships of Bureaus of Child Hygiene and Bureaus of Public Health Nursing in State Boards of Health. J. L. Marriner, Montgomery, Ala.—p. 707.
Value of Public Health Nurse in Public Health and Welfare Administration. C. J. Hastings, Toronto, Ont.—p. 712.
Health Teaching and School Health Program. C. E. Turner, Cambridge, Mass.—p. 717.
Measuring Rods of Infant Mortality. D. M. Lewis, Charleston, W. Va.—p. 721.
Maritime Quarantine a Constructive Health Agency. S. B. Grubbs, Panama Canal.—p. 725.
Practical Laboratory Diagnosis of Typhoid Fever. A. H. Strauss, Richmond, Va.—p. 729.
Testing of Antistreptococcus Serum. E. M. A. Enlows, Washington, D. C.—p. 733.
Study in Dental Prophylaxis. T. P. Hyatt, New York.—p. 739.
Applied Sanitation in Alabama G. H. Hazelhurst and C. A. Abele, Montgomery, Ala.—p. 741.
Market Milk Rating from a Public Health Standpoint. R. S. Dearstyne, Raleigh, N. C.—p. 743.

American Journal of Syphilis, St. Louis

July, 1921, **5**, No. 3

Venereal Disease Control. C. C. Pierce, Washington, D. C.—p. 377.
*Experimental Observations on Effect of Cholesteremia on Results of Wassermann Test. C. F. Craig and W. C. Williams, Washington, D. C.—p. 392.
*Viability of Spirochaeta Pallida in Excised Tissue and Necropsy Material. G. R. Lacy and S. R. Haythorn, Pittsburgh.—p. 401.
*Case of Syphilis of Prostate. A. S. Warthin, Ann Arbor, Mich.—p. 409.
Flocculation Reactions in Syphilis: Meinicke and Sachs-Georgie Reactions. S. A. Levinson, Chicago.—p. 414.
Studies in Standardization of Wassermann Reaction. XIX. Factors Relating to Serum and Serum Control Tube. J. A. Kolmer, Philadelphia.—p. 439.
Id. XX. Study of Factors Influencing Amount of Hemolysin Employed in Complement-Fixation Tests. J. A. Kolmer, E. Yagle and A. M. Rule, Philadelphia.—p. 451.
Spinal Puncture in Diagnosis and Treatment. C. H. Bastron, Lincoln, Neb.—p. 463.
Diagnosis of Syphilis. H. H. Hazen, Washington, D. C.—p. 472.
Complement-Fixation Tests with Two Antigens. Comparison of Results of Series of Routine Public Health Complement-Fixation Tests for Syphilis with Two Antigens. M. E. Larkin, Seattle, Wash.—p. 476.
*Luetin. H. C. Ward, Detroit.—p. 482.
*Valuable Method of Treatment in Selected Cases of Syphilis. W. H. Guy, Pittsburgh.—p. 496.

Effect of Cholesterinemia on Wassermann Test.—The feeding of 1.25 gm. cholesterin per kilo of body weight to rabbits Craig and Williams found resulted in an enormous accumulation of cholesterin in the blood, an accumulation that persists, in some instances; for several days after the feeding is stopped. However, there is no relationship between the cholesterin content of the blood serum of rabbits and the results of the Wassermann test, all of the animals experimented on giving a consistently negative reaction despite the enormous increase in the cholesterin content of their blood serum resulting from the feeding of this substance.

Viability of Spirochaeta Pallida.—From the experiments made by Lacy and Haythorn it is evident that spirochetes kept in serum or moist tissue, either human or animal, may retain slight motility as long as three months or more. Complete drying is probably fatal to the *Spirochaeta pallida*, since each of our rabbits inoculated with dried spirochetes on scalpels, failed to develop syphilitic lesions, *Spirochaeta pallida* may, and in one case did, remain virulent in necropsy material for twenty-six hours or longer.

Syphilis of Prostate.—Warthin makes a full report of what he claims is the only positively demonstrated case of syphilis of the prostate existing in the literature at the present time. It is shown that the prostate may present characteristic lesions of syphilis relatively early in the course of the infection, and that these may exist in a marked degree without causing any enlargement of the organ, or any symptoms directly referable to it. The histologic picture of syphilis in this organ is identical with that found in the myocardium, aortic wall, suprarenals, and other organs.

Luetin.—Ward calls attention to the finding of 27 per cent. positive luetin reactions in forty-seven syphilitics. In a second series of 200 unselected cases there were 75 per cent. corroborative returns. As an indicator of the value of antisyphilitic treatment it has verified the Wassermann test in a high proportion of cases but remained positive in from 10 to 15 per cent. These findings are suggestive that luetin as a measure of the allergic reaction in syphilis has a much higher value both negatively and positively than has been emphasized heretofore.

Treatment of Syphilis.—Guy gives 1 gm. arsphenamin for each 30 pounds of body weight on each of three successive days. This is repeated after one month, and again after the same interval. In selected primary cases he occasionally gives the second three injections of arsphenamin after an interval of two weeks. The patients are also kept saturated with mercury during this same period, either soluble or insoluble salts being used intramuscularly, dosage being estimated according to the tolerance of the individual. On completion of the course a therapeutic rest of approximately eight weeks is given, after which rest the course is repeated except in dark field positive, Wassermann negative cases. Three such courses are given in the average case, the amount of medication obviously being varied in different individuals.

Annals of Otology, Rhinology and Laryngology, St. Louis

June, 1921, **30**, No. 2

Anatomy of Human Temporal Bone. J. Goldstein, Stanford University, Calif.—p. 331.
Roentgenographic Study of Accessory Sinuses with Special Reference to New Technic for Examination of Sphenoid Sinuses. G. E. Pfahler, Philadelphia.—p. 379.
Experiments to Show Flow of Fluid from Region of Tegmen Tympani, Extradural to and Medial to Passage of Sixth Cranial Nerve Through Dura Mater to Lateral Wall of Cavernous Sinus. H. J. Prentiss, Iowa City, Ia.—p. 397.
Fossa of Rosenmueller. H. J. Prentiss, Iowa City, Ia.—p. 405.
Mastoid Process and Its Cells. H. J. Prentiss, Iowa City, Ia.—p. 417.
Use of Radium, Roentgen Ray and Other Nonsurgical Measures, Combined with Operations About Head and Neck. J. C. Beck, Chicago.—p. 425.
Tonsil Question — Relation to Ductless Glands — Futility of Operative Interference in Exudative Diathesis Type of Children. G. Selfridge, San Francisco.—p. 497.
Normal and Pathologic Pneumatization of Temporal Bone — A Review. N. H. Pierce, Chicago.—p. 509.
Sarcoma of Mastoid. H. Friedenwald and J. I. Kemler, Baltimore.—p. 521.
Minor Rôle of Conduction Apparatus in Slowly Progressive Deafness. F. P. Emerson, Boston.—p. 527.
Acute Hemorrhagic Otitis Media. H. C. Ballenger, Chicago.—p. 539.
Bacterial Flora and Weights of a Series of Excised Tonsils. E. J. Lent and M. W. Lyon, Jr., South Bend, Ind.—p. 545.
Epidemic Mastoiditis. J. E. Reeder, Sioux City, Ia.—p. 551.
Ethmoid Operations (During Latent Stage) Followed by Death. Report of Cases. L. Ostrom, Rock Island, Ill.—p. 556.
Abscess of Frontal Lobe Secondary to Sinusitis. G. W. Boot, Chicago.—p. 565.
Case of Orbital Abscess from Ethmoid Suppuration. C. M. Miller, Richmond, Va.—p. 569.
Argument in Favor of Preligation of Jugular in Sinus Thrombosis. T. H. Odeneal.—p. 572.

Annals of Surgery, Philadelphia

August, 1921, **74**, No. 2

*Malignant Tumors of Thyroid. L. B. Wilson, Rochester, Minn.—p. 129.
Clinical Experience with Synergistric Analgesia. J. T. Gwathmey and J. Greenough, New York.—p. 185.
Certain Fundamental Laws Underlying Surgical Use of Bone Graft. F. H. Albee, New York.—p. 196.
*Results of Treatment of 115 Cases of Fracture of Shaft of Femur at University of Pennsylvania Hospital. E. L. Eliason, Philadelphia.—p. 206.
Fracture of Metatarsal Bones. E. G. Alexander, Philadelphia.—p. 214.
*Chorio-Epithelioma Following Hydatiform Degeneration. R. L. Payne, Norfolk, Va.—p. 219.
*Perforated Gastric and Duodenal Ulcer without Previous Pain. G. P. Muller and I. S. Ravdin, Philadelphia.—p. 223.
*Polypoid Lipoma of Intestinal Tract. G. A. Carlucci, New York.—p. 230.
*Myoma of Rectum. V. C. Hunt, Rochester, Minn.—p. 236.

Malignant Tumors of Thyroid.—Attention is called by Wilson to the unappreciated relative frequency of the malignant tumors of the thyroid, and he summarizes the principal

observations in a pathologic study of the thirty-five cases which have been observed in the Mayo Clinic from Jan. 1, 1901, to Jan. 1, 1921. A bibliography covering the subject during the last fourteen years is appended.

Results of Treatment of Fracture of Femur.—In patients under 8 years of age Eliason says the Bryant or perpendicular treatment gave the best figures, 85 per cent. excellent, or 100 per cent. good results. In this group all results were reported as good. In the eighty-eight cases 10 years of age or older the primary reduction and dressing was not satisfactory in a single case. A small group of eight cases later set in plaster under traction, all showed shortening or nonunion. The next group of twenty cases dressed in the flexed position with weight traction gave 25 per cent. good results with no deformity. In operative cases infection occurred in none of the drained wounds. Every case however showed slight infection around the Steinmann nail. Internal fixation failed to hold the fracture in twenty-one of fifty-four cases. Causes of this failure were in the greater number of cases due to the position in which the limb was splinted, twenty being dressed in the flat position, and to a much less extent to infection, only three cases. Nonunion, or better, union delayed longer than seven weeks, was most often due to faulty fixation of the fracture, and occcurred in 22.2 per cent. of the operative, 0.86 per cent. of the nonoperative and 10 + per cent. of the entire series. It is hardly fair to include these figures as other than undetermined, as they have not been heard from finally. Operation gave 81.6 per cent. good results; nonoperative methods gave 73.9 per cent. good results in the entire series of 115. Of the operative procedures, the use of plates and screws with wound drainage and the limb dressed in plaster, in flexed position, with postoperative traction maintained, gave 90 per cent. perfect results, plus 10 per cent. good. All other operative methods gave but 33⅓ per cent. perfect results plus 33⅓ per cent. good results.

Chorio-Epithelioma Following Hydatid Degeneration.—Of four cases cited by Payne, three patients are alive and well. One case is recent and the result cannot be reported. Payne suggests that a more extensive experience with radium in these conditions may lend hope in the treatment of the malignant transitions which heretofore have been considered necessarily fatal.

Perforation of Gastric Ulcer Without Previous Pain.—Four of fifteen cases seen by Muller and Ravdin in which the histories were complete, or 26 per cent. of them, were instances where perforation was the first sign of abdominal pathology.

Polypoid Lipoma of Intestine.—In the case cited by Carlucci the tremor was situated at the ileocecal junction. Anatomically, the patient showed distinct signs of incomplete development as evidenced by undescended testicles, congenital hernia, and apparent incomplete rotation of the large intestine as shown at operation by the finding of the ileocecal junction in the splenic region and the presence of a long mesentery attached to the first portion of the ascending colon. Pathologically, the tumor as a gross specimen had all the appearance of a malignant growth, but on section and microscopically no evidence of malignancy could be found.

Myoma of Rectum.—In an extensive review of the literature only twenty cases have been found by Hunt since 1872 which can be classified definitely as myoma or myofibroma of the rectum. Four additional cases have been seen in the Mayo Clinic.

Boston Medical and Surgical Journal

Aug. 25, 1921, **185**, No. 8

*Unusual Cure of Large Hemangioma. D. S. Adams, Worcester, Mass. —p. 219.
Experience in Massachusetts and Few Other Places with Smallpox and Vaccination. J. E. Henry, Boston.—p. 221.
*Myocardial Lesions in School Children. H. W. Dana, Boston.—p. 228.
High-Grade Neurasthenic. H. J. Hall, Marblehead.—p. 232.
Congenital Hypertrophic Pyloric Stenosis. C. A. Sparrow, Worcester. —p. 235.
Diagnosis of Paralytic or Early Poliomyelitis. S. A. Levine, Boston. —p. 238.

Cure of Large Hemangioma in New-Born.—A child, one of twins, was born with a tumor of the right chest wall. The attending physician aspirated, getting away several cubic centimeters of blood. The tumor became somewhat larger on subsequent days, so that it was thought best to have hospital care. Attached to the right chest wall along midaxillary line, by a sessile pedicle, was a hemangioma, rather malignant in appearance, lobulated, and rather tense, with a port wine colored stain near its apex, where the aspiration had been done. Measurements at that time were 17.5 cm. in length, 15 cm. in width, and 35 cm. at base or greatest circumference. It had no intrathoracic or bony origin. Iron was given daily in 5 grain doses. At first the tumor increased in size and became darker in color. There was fever. Slowly the tumor decreased in size. In places it broke down and sloughed, and from various places, a slight bloody discharge was noted. One month later the tumor was about half its original size. It had contracted down, was more firm in feel but continued to discharge a moderate amount of bloody fluid. At the end of the seventh week the tumor was practically gone, there being only a slight protrusion of reddish, dense tissue. In another week it was gone, leaving only a reddish scar. The rise in temperature is significant. Adams says at the end of this time, the tumor began to decrease in size. Either there was a secondary infection following the introduction of the trocar, or a thrombotic process was started, thus leading to the subsequent slough.

Myocardial Lesions in Schoolchildren.—Dana claims that proof of myocardial insufficiency is often to be found in supposedly healthy children. This may be evidenced in any one of the following ways: (*a*) in the production of a relative mitral regurgitation as the result of exercise; (*b*) in the movement of the apex beat outward or downward as the result of moderate exertion; (*c*) in the appearance of a gallop rhythm after exercise. Myocardial insufficiency of sudden onset is usually the result of an acute infection. Among infections affecting the heart, measles would seem to have an important place. After an acute illness, a child should not be discharged by his physician until an "effort test" produces no evidence of myocardial decompensation. In public schools, the school physician should make this test on each child returning from quarantine to the school.

Florida Medical Association Journal, St. Augustine and Jacksonville

August, 1921, **8**, No. 2

Indirect Influence of Railroad Surgeon. R. B. Slocum, Wilmington, N. C.—p. 21.
Operations for Radical Cure of Inguinal Hernia. F. J. Waas, Jacksonville.—p. 24.
Accident Hernia, from Standpoint of Liability. L. S. Oppenheimer, Tampa.—p. 27.

Journal of Biological Chemistry, Baltimore

August, 1921, **47**, No. 3

Simple Technic for Determination of Calcium and Magnesium in Small Amounts of Serum. B. Kramer and F. F. Tisdall, Baltimore.—p. 475.
*Vitamin Studies. VIII. Effect of Heat and Oxidation on Antiscorbutic Vitamin. R. A. Dutcher, H. M. Harshaw and J. S. Hall, St. Paul. —p. 483.
Simple Laboratory Gas Meter and Improved Haldane Gas Analysis Apparatus. H. S. Newcomer, Philadelphia.—p. 489.
Lipase Studies. I. Hydrolysis of Esters of Some Dicarboxylic Acids by Lipase of Liver. A. A. Christman and H. B. Lewis, Urbana, Ill. —p. 495.
*Studies on Experimental Rickets. VIII. Production of Rickets by Diets Low in Phosphorus and Fat-Soluble A. E. C. McCollum, N. Simmonds, P. G. Shipley and E. A. Park, Baltimore.—p. 507.
*Diffusible Calcium of Blood Serum. I. Method for Its Determination. L. von Meysenbug, A. M. Pappenheimer, T. F. Zucker and M. F. Murray, New York.—p. 529.
*Id. II. Human Rickets and Experimental Dog Tetany. L. von Meysenbug and G. F. McCann, New York.—p. 541.
Oxygen Dissociation of Hemoglobin, and Effect of Electrolytes on It. E. F. Adolph and R. M. Ferry, Cambridge, Mass.—p. 547.
Animal Calorimetry. Influence of Colloidal Iron on Basal Metabolism. E. Langfeldt, New York.—p. 557.
*Chemical Factors in Fatigue. L. Effect of Muscular Exercise on Certain Common Blood Constituents. N. W. Rakestraw, Stanford University.—p. 565.

Effect of Heat and Oxidation on Antiscorbutic Vitamin.—Dutcher, Harshaw and Hall found that the antiscorbutic vitamin is not destroyed by heating at pasteurization temperature (63 C.) for thirty minutes in closed vessels or by boiling (100 C.) for thirty minutes under reflux condensers. Hydrogen peroxid possesses some destructive action when added to orange juice at room temperature and the destructive action is increased when the orange juice-hydrogen

peroxid mixture is heated at 63 and 100 C. The antiscorbutic properties of orange juice are susceptible to oxidation but, in the absence of oxidizing agents, are stabile to heat up to the boiling temperature of orange juice.

Production of Rickets by Faulty Diet.—Faulty rations containing 2 per cent. added calcium carbonate, gave rise to pathologic conditions in the skeleton essentially identical with those found in the human subjects of rickets. The addition of 0.5 per cent. butter fat, while insufficient to prevent the development of xerophthalmia, was sufficient to delay its advent and to diminish its rate of progress. It increased the duration of life and made possible, presumably, increased growth of the skeleton. The authors have repeatedly observed that, if calcium carbonate in large quantities (from 3 to 6 per cent. of the total ration) is added to a ration insufficiently supplied with the organic factor and only slightly or not at all deficient in its content of phosphorus, most pronounced changes occur at the growing ends of the long bones. The cartilage undergoes degenerative and metaplastic changes, and fails to take up calcium phosphate with any regularity, or to take it up at all. Patent flour is one of the most deficient foods which enters into the human diet, being exceeded in this respect only by isolated foods such as starch, sugars, fats, or polished rice. Bolted flour is rather poor in protein and this is of rather poor quality. It is very deficient in calcium, phosphorus, sodium, chlorin, iron, and possibly also in potassium. The only essential inorganic element which it probably contains in amount sufficient to meet the physiologic needs of an animal is magnesium. Bolted flour is also very deficient in the antineuritic substance water soluble B. It is exceedingly poor in fat soluble A, and in the organic antirachitic factor. Apparently in the rat the profound disturbances in the deposition of lime salts in cartilage and bone and the changes in the cells of those tissues which give rise to the pathologic complex known as rickets may be produced by disturbances in the diet of the optimal ratio between calcium and phosphorus in the absence of an amount of an organic substance contained in cod liver oil sufficient to prevent them. It would seem from the results of a large number of experiments, that in so far as calcium and phosphate are concerned, the physiologic relation in the diet between the two is of infinitely greater importance in insuring normal calcification than the absolute amount of the salts themselves.

Determination of Diffusible Calcium in Serum.—The diffusible calcium of the serum of normal men and dogs was found by von Meysenbug and his associates to comprise from 60 to 70 per cent. of the total serum calcium. Varying the carbon dioxid saturation of the serum between 17 mm. mercury tension and 62 mm. does not alter this percentage. The authors have devised a method of dialyzing serum against a buffer solution of the Ringer type, at the same time maintaining a constant carbon dioxid tension in the dialyzing system.

Rickets and Experimental Tetany.—In two cases of rickets, with serum calcium of 9.0 and 7.6 mg. per hundred c.c., the percentage of diffusible calcium was found by von Meysenbug and McCann to be between 58 and 70 per cent., within the range found in normal subjects. In four cases of experimental tetany in dogs, similar percentages of dialyzable calcium were found, 58 to 71 per cent., with serum calciums of 6.1 to 8.4 per hundred c.c. Two of these dogs showed a reduced carbon dioxid combining power of the plasma at the time the calcium determinations were made, showing that this form of acidosis does not affect the diffusible calcium. It, therefore, appears that, in so far as can be determined by in vitro experiment, the reduced serum calcium in experimental tetany is not due to a lowering of the diffusible as contrasted with the nondiffusible form. The proportion between the two remains constant in the presence of a reduced total. Also, this proportion does not change with varying carbon dioxid combining powers of the plasma.

Chemical Factors in Fatigue.—An investigation was undertaken by Rakestraw on twenty-one human subjects to determine the changes produced by severe muscular exercise on the following constituents of blood and plasma: nonprotein nitrogen, urea, sugar, uric acid, performed and total creatinin, cholesterol, and hemoglobin, as well as specific gravity, and the number and relative volume of corpuscles. Two types of exercise were employed, representing, short, strenuous effort and longer, more tedious work. Short, strenuous exercise was invariably found to increase the blood sugar concentration both in plasma and corpuscles, while a longer period of exercise was generally accompanied by a drop in blood sugar, which was greater in the plasma than in the whole blood. Both kinds of exercise were accompanied by a small increase in uric acid, of about the same order, which was greater in the plasma than in the whole blood. Short, strenuous exercise had no effect on urea or nonprotein nitrogen, but longer work increased both slightly, in whole blood as well as plasma. In both types of exercise the total creatinin increased very little, while the preformed creatinin underwent almost no change. It is shown conclusively that there were no considerable changes in the total blood volume during the muscular exercise and that variations in the concentration of the blood are not, therefore, disturbing factors in the above conclusions. Cholesterol was found to decrease very slightly, although results were not thoroughly consistent. The decrease seemed to be somewhat more noticeable in the corpuscles than in the plasma. The specific gravity, hemoglobin, and the number and relative volume of corpuscles were found to increase during the periods of exercise. The viscosity of the whole blood was found to increase considerably and that of the plasma slightly. Some incomplete data are given suggesting that total nitrogen is increased in the blood by exercise and that urea, nonprotein nitrogen, and uric acid continue to increase for some time after a work period, while the sugar concentration, on the other hand, returns to normal within two and a half hours.

Journal of Industrial Hygiene, Boston

August, 1921, **3**, No. 4

Does Magnetic Field Constitute an Industrial Hazard? C. K. Drinker and R. M. Thomson, Cambridge, Mass.—p. 117.
Industrial Physician and Qualifications Essential to His Success. W. J. McConnell, U. S. Public Health Service.—p. 130.
Interchange of Physical Examinations in Industry. H. Myers, Mansfield.—p. 135.
Physiologic Effects of Automobile Exhaust Gas and Standards of Ventilation for Brief Exposures. Y. Henderson, H. W. Haggard, M. C. Teague, A. L. Prince and R. M. Wunderlich, New Haven, Conn.—p. 137.

Journal of Orthopaedic Surgery, Boston

August, 1921, **3**, No. 8

Report of Commission on Congenital Dislocation of Hip. J. F. Goldthwait, Boston.—p. 353.
Statistical Report of Commission on Congenital Dislocation of Hip, for 1921. Z. B. Adams, Boston.—p. 357.
Lessons from My Experience with Congenital Dislocation at Hips. J. Ridlon, Chicago.—p. 365.
Manipulation of Stiff Joints. R. Jones, Liverpool, England.—p. 385.
Fractures of Elbow in Children. J. S. Stone, Boston.—p. 395.
*Arthrodesis of Sacroiliac Joint. A New Method of Approach. M. N. Smith-Petersen, Boston.—p. 400.
Application of Muscle Physiology to Treatment of Paralysis. L. G. Teece, Sydney, Australia.—p. 405.

Arthrodesis of Sacro-Iliac Joint.—Lateral approach to the joint is advocated by Petersen. Curved incision is made from the posterior superior spine along the crest of the ilium, two thirds of the distance to the anterior superior spine. This incision is carried down to the bone and the reflection of the periosteum started. Then an incision is made from the posterior superior spine in the direction of the fibers of the gluteus maximus for a distance of 3 to 4 inches. This incision is carried down through the subcutaneous fat and gluteal fascia and the muscle fibers of the gluteous maximus separated by blunt dissection, until the junction of the ilium and sacrum between the posterior superior and posterior inferior spines is reached. The flap thus outlined is reflected subperiosteally, exposing the posterior portion of the lateral surface of the ilium. A window is now cut through the ilium within the projected area of the joint. On removal of the window the cartilaginous joint surface of the sacrum as well as its cortex is next removed bringing about a good exposure of cancellous bone. After removing the cartilage and cortex from the block of bone removed from the ilium, this is replaced in its original site and counter sunk, so that its cancellous surface will be in contact with the cancellous bone of the sacrum. The flap is now returned to its place and periosteum and soft parts sutured in layers. The position of the window should be varied according to the case encountered.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

August, 1921, **18**, No. 1

*Relative Amounts of Depressor and Bronchoconstrictor Substance Obtainable from Anterior and Posterior Lobes of Fresh Pituitary Gland. J. Roca, Baltimore.—p. 1.
Pituitary Active Principles and Histamin. H. H. Dale and H. W. Dudley, Hampstead.—p. 27.
Chronic Intoxications on Albino Rats. V. Arsenic Trioxid. T. Sollmann, Cleveland.—p. 43.
Chemical Composition and Physiologic Characteristics of Brain Cephalin. F. Fenger, Chicago.—p. 51.
Pharmacology of Chelidonin, Benzylisoquinoline Alkaloid of Chelidonium Celandine or Tetterwort) and Stylophorum. P. J. Hanzlik, Cleveland.—p. 63.

Depressor and Bronchoconstrictor Substances in Pituitary.—Simple aqueous extracts of the posterior and anterior lobes of the pituitary gland prepared in such a way as to abolish their blood pressure raising properties and to preclude all chance of bacterial activity Roca found possess blood pressure lowering and bronchoconstrictor properties. Extracts of this kind made from the posterior lobe of the gland are from seven to eight times more depressant for the arterial pressure than are similar extracts of the anterior lobe, equal weights of the two lobes being used as the basis of comparison. The bronchoconstrictor action of extracts of the posterior lobe is very marked in comparison with that exhibited by extracts of the anterior lobe and the ratio of the activity of equivalent extracts of the two lobes is certainly greater than 8:1. Chloroform takes up from a properly prepared and dried extract of sterile posterior and anterior lobes of the pituitary gland a determinable amount of a substance which acts like histamin on the arterial pressure, the uterus and the bronchi. The posterior lobe yields to chloroform about twenty times more of this substance than does the anterior lobe, weight for weight of fresh material. The substance which passes into chloroform and which has the pharmacodynamic action of histamin is thought to be this latter compound, because of its behavior during the chemical manipulations to which it was subjected by Roca, as also on the ground of its physiologic properties.

Kentucky Medical Journal, Bowling Green

August, 1921, **19**, No. 8

Radium Treatment of Cancer: Plea for Cooperation Between Surgeons and Radiotherapeutists. W. J. Young, Louisville.—p. 450.
Treatment of Skin Tumors. M. L. Ravitch, Louisville.—p. 452.
Malignancy of Face and Jaws. F. T. Fort, Louisville.—p. 456.
Follicular and Perifollicular Urethritis with Sequels. J. G. Carpenter, Stanford.—p. 462.
Local Versus General Anesthesia in Tonsilectomy. R. H. Cowley, Berea.—p. 468.
Intensive Study of Cardio-Renal Disease. C. W. Dowden, Louisville.—p. 472.
Relation of Mouth Infection to Systemic Diseases. G. H. Heymann, Louisville.—p. 478.
Esophagoscopy and Bronchoscopy in Diagnosis and Treatment. Safe Rules to Follow in Emergency Cases. G. C. Hall, Louisville.—p. 482.
Ocular Symptoms of Brain Tumor. S. G. Dabney, Louisville.—p. 491.
Misleading Symptoms in Synovitis and Bursitis. B. A. Washburn, Paducah.—p. 498.
End Results of Surgery of Kidney. J. R. Wathen, Louisville.—p. 501.
Tertiary Syphilis: Report of Three Cases. J. G. Sherrill, Louisville.—p. 504.
Proper Position of Roentgen Ray in Diagnosis. D. Y. Keith, Louisville.—p. 508.
*End-Results in Surgery of Gastric and Duodenal Ulcer. L. Frank, Louisville.—p. 514.
End Results Following Operations on Bile Passages. G. Aud, Louisville.—p. 516.
*Epigastric Hernia. O. Bloch, Louisville.—p. 520.
Fifty-Cent Piece in Esophagus for Three Months. Removal Through Mouth. S. S. Watkins, Louisville.—p. 523.
*Occupational Pain: Tuberculosis; Case Report. J. J. Moren, Louisville.—p. 526.

Surgery of Gastric and Duodenal Ulcer.—Surgical treatment of gastric and duodenal ulcers Frank asserts is superior in results to medical treatment. In from 75 to 85 per cent. of cases the results of surgical treatment are quite satisfactory to the patient. Many of the failures to completely relieve he claims are due to delay in instituting surgical intervention. Failures are also due to incorrect diagnosis and to the performance of gastro-enterostomy when no ulcer is present, the cause of the digestive disturbance being other than ulcer. In the presence of ulcer, lack of cure may also be the result of imperfect technic or of an incorrect type of operation, thereby leaving the way open to postoperative complications or sequels.

Epigastric Hernia.—Four patients with epigastric hernia form the subject of Bloch's paper. One of these came with a diagnosis of hernia or lipoma from a diagnostic clinic; at operation careful dissection around the rounded extra abdominal lobule of fat showed its protrusion through an opening in the median line; this opening was enlarged to a sufficient extent to permit of ligation of the round ligament, with suturing of the stump to the abdominal wall. This patient's clinical symptoms were mental and physical; he complained of indigestion; pain after eating; belching and irregular appetite. His mental symptoms were such as to make him a neurasthenic suspect. His operative recovery was perfect, with complete abatement of his symptoms. Another patient entered the hospital with a clinical diagnosis of probable pancreatic growth from a diagnostic laboratory; a very small hernia was found in the middle line, about midway between the umbilicus and the sternum; this hernia disappeared when the patient lay down, but the abnormal opening was readily felt, when the abdominal recti muscles were made tense by the patient's lifting his head. This man's outstanding symptom was pain, more or less constant, increased by food or by exercise. Entire relief resulted from the operation. The other patients came into the hospital without previous examination and the hernias were readily found; operation relieved them.

Tuberculosis Causing Pain in Arm.—Moren cites the case of a young man, a pianist, who had pain in his left arm. He gave the history of having had occupational pains, attributed to overexertion in playing the piano. The pain always started in the middle of the left anterior chest. The roentgen ray disclosed a cavity in the left lung, probably an old process which had healed, and in appearance was typically tuberculous. There was also an active tuberculous process in the right lung. The man had no elevation of temperature, no shortness of breath, and no other significant symptoms so far as the neurologic examination was concerned. Moren believes that possibly adhesions started the pain in his left chest which radiated downward into the left arm.

Medical Record, New York

Aug. 27, 1921, **100**, No. 9

*Orthopedic Treatments in Chronic and Severe Nervous Diseases. S. W. Boorstein, New York.—p. 353.
Treatment of Epileptic Manifestations in Children from Standpoint of Constitutional Basis. E. B. McCready, Pittsburgh.—p. 358.
Disease as Seen Through Therapeutics. G. Leven, Paris, France.—p. 360.
Etiology of Hypertension. J. F. Yarbrough, Columbia, Ala.—p. 362.
*Acute Anterior Poliomyelitis of Unusual Type. L. Hannah, Sylvania, Ga.—p. 364.
Foreign Bodies in External Auditory Canal. J. Friedman and S. D. Greenfield, New York.—p. 365.
Treatment of Pulmonary Tuberculosis with Sulphur Dioxid. F. Tweddell, Great Neck, N. Y.—p. 367.
Induction of Gradual, Normal, Menopause After Ovariectomy. A. G. Hulett, East Orange, N. J.—p. 369.

Orthopedic Treatment in Nervous Diseases.—Boorstein pleads for more frequent application of orthopedic methods in neurologic cases and details the methods employed in Montefiore Hospital. The treatments include medications, but the main work is left to the orthopedic surgeon.

Acute Anterior Poliomyelitis of Unusual Type.—The features of interest in connection with Hannah's case were the total absence of fever, headache, pain, and convulsions, and the presence of a hemiplegic type of paralysis, with facial involvement.

Michigan State Medical Society Journal, Grand Rapids

August, 1921, **20**, No. 8

Local Tonsillectomy Technic. J. M. Robb, Detroit.—p. 303.
*Vaccine Treatment of Asthma. A. D. Wickett, C. Corley and J. T. Connell, Ann Arbor.—p. 305.
Prophylaxis and Treatment of Anal Incontinence Following Operations for Fistula. L. J. Hirschman, Detroit.—p. 309.
Tenotomy of Inferior Oblique Muscle. W. R. Parker, Detroit.—p. 313.
Sequels of Epidemic Encephalitis. C. D. Camp, Ann Arbor.—p. 314.
Woman in Labor. W. P. Manton, Detroit.—p. 316.
*Hemophilia. G. C. Stewart, Hancock.—p. 317.

Vaccine Treatment of Asthma.—The authors regard bronchial asthma as the sequel of focal infection, and have sought for a primary focus mainly in the tonsils, accessory sinuses

and in the bronchi. The focal infection is treated surgically if possible, and as much of the infection eradicated as seems advisable. So far they have no occasion to regard the teeth as the cause of bronchial asthma. The medium used for the preparation of the vaccine is 2 per cent. peptone broth with a p_H 7.6 to which 10 per cent. rabbit serum has been added. This is inoculated with material from the tonsil, sinus or sputum, and incubated for twenty-four hours. If the growth is good, it is then diluted with sterile physiologic sodium chlorid solution, to a concentration of two hundred million organisms per c.c. This standardized vaccine is placed in sterile test tubes sealed off in a flame, and when cool, immersed in a water bath at 60 F. for one hour. It is then tested for sterility and if sterile it is ready for use. The routine initial dose is 50,000,000 bacteria; second, 100,000,000; third, 150,000,000, and the fourth and succeeding doses, 200,000,000. The interval between doses is from five to seven days. Treatment is continued for several weeks after the patient is free from asthma. Of thirteen cases reported ten patients show complete relief.

Familial Hemophilia.—Stewart cites the case of a family of bleeders. Beyond the immediate family none of the relatives on either side were troubled with bleeding. The father and his brothers when quite young, used to have profuse nosebleeds, but none ever suffered any ill effects and as they became older they gradually became less frequent until they ceased entirely. Of eleven children, four girls and seven boys all but one boy died before reaching the age of 12. In fact all died in infancy with the exception of three boys and two girls; the girls dying of disease while one boy died as the result of biting his tongue. The wound was very small but he died after one week of continuous bleeding. The other boy had a hemorrhage of the stomach although he was not known to have injured himself in any way. The remaining boy, who is the only survivor of the children, has had several very close calls because of his hemophiliac tendencies.

New Orleans Medical and Surgical Journal

August, 1921, **74**, No. 2

Safety Factors in Supra-Pubic Prostatectomy. A. Nelken, New Orleans.—p. 78.
Statistical Study of Three Thousand Cases of Mental Diseases. H. Daspit, New Orleans.—p. 84.
Epidemic Encephalitis. L. V. Lopez, New Orleans.—p. 90.
Prognosis in Insanity. C. V. Unsworth, New Orleans.—p. 101.
Nitrous Oxid, Oxygen Analgesia and Anesthesia in Obstetrics. T. B. Sellers, New Orleans.—p. 109.
Child Welfare. R. M. Crawford.—p. 116.
Hypertrophied Anal Papillae. A. G. Heath, Shreveport.—p. 121.
Preventable Vocational Eye Injuries. W. B. White, Shreveport.—p. 126.

New York Medical Journal

Aug. 17, 1921, **114**, No. 4

Predisposing Factor in Diphtheria. B. Schick, Vienna.—p. 197.
Medical Supervision of Destitute Child. M. Ladd, Boston.—p. 199.
Nervous Child. C. W. Burr, Philadelphia.—p. 205.
Psychoses and Potential Psychoses of Childhood. E. A. Strecker, Philadelphia.—p. 209.
Problems of Personality in Disease. M. E. Kenworthy, New York.—p. 211.
Personality in Making. W. H. Grossmann, Plainfield, N. J.—p. 215.
Pulmonary Tuberculosis in Young Children. A. E. Siegel, Philadelphia.—p. 223.
Hyperchlorhydria in Childhood. L. Berman, New York.—p. 226.
Prevention of Measles. I. W. Brewer, Watertown, New York.—p. 228.
Children's Fears. F. Russ-Barker, London.—p. 229.
Suggested Form of Treatment for Mental Deficiency in Children. J. A. Miller, New York.—p. 231.
Chronic Effects of War Gassing. Z. I. Sabshin, New York.—p. 232.

Northwest Medicine, Seattle

August, 1921, **20**, No. 8

Nephritis. W. Ophüls, San Francisco.—p. 199.
Treatment of Sarcoma with Radium: Report of Cases. S. W. Mowers, Seattle.—p. 206.
Causes and Results of Deflection of Nasal Septum. E. A. Woods, Ashland, Ore.—p. 210.
Clinical Interpretation of Wassermann Test. A. R. Robertson, Seattle.—p. 215.
Arsphenamin in Treatment of General Paresis. D. R. Ross, Salem, Ore.—p. 218.
Surgical Significance of Parasitism in Human Host. J. B. McNerthney, Tacoma, Wash.—p. 219.
Plea for Phototherapy in Surgical Tuberculosis. E. Hoff, Seattle.—p. 221.
*Acute Dilatation of Heart. Together with Associated Pathology in Case of Sudden Death. F. R. Menne, Portland.—p. 222.

Acute Dilatation of Heart.—A man about 40 years of age dropped dead. He was engaged in hunting coyotes, in the process of which he dug pits and blasted with nitroglycerin. The salient features of the necropsy in the way of anatomic changes found by Menne were: Acute dilatation of the chambers of the heart, marked hypertrophy of the musculature of the heart, pronounced obliterative sclerosis of the posterior coronary artery; marked senile and syphilitic arteriosclerosis with slight supervalvular aneurysm formation, chronic interstitial myocarditis, marked diffuse nephritis (arteriosclerosis) marked emphysema of the lungs, edema of the brain. The syphilitic lesions are ridgelike and are most pronounced in the first portion of the arch. The opening of the posterior coronary artery could not be identified.

Pennsylvania Medical Journal, Harrisburg.

August, 1921, **24**, No. 4

Cancer of Breast with Study of Results Obtained in 218 Cases. W. E. Sistrunk, Rochester, Minn.—p. 781.
Bubonic Plague: Its Prevalence in United States and How Danger Should be Met. E. B. Krumbhaar, Philadelphia.—p. 786.
Diagnosis of Functional Capacity of Kidneys in Various Types and Stages of Nephritis. R. R. Snowden, Pittsburgh.—p. 791.
Duty of Pediatrician to Mother of New-Born. O. N. Chaffee, Erie.—p. 794.
Pediatrics in Small City. H. E. Hall, Uniontown.—p. 796.
Practical Use of Baranу Tests Away from Medical Centers. W. H. Sears, Huntingdon.—p. 798.
Relation of Intranasal Pressure to Heterophoria. J. M. Griscom, Philadelphia.—p. 804.
Altered Blood Pressure and Its Relation to Imbalance. D. J. McCarthy, Philadelphia.—p. 806.
Infantilism in Children. J. D. Leebron, Philadelphia.—p. 810.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Aug. 13, 1921, **2**, No. 3163

Early Diagnosis and Treatment of Acute Poliomyelitis. E. F. Buzzard.—p. 225.
Asthma and Allied Disorders. H. Rolleston.—p. 231.
Adolescent Tetany and Its Relation to Guanidin. F. J. Nattress and J. S. Sharpe.—p. 238.
*Sachs-Georgi Precipitation Test for Syphilis. T. Taniguchi and N. Yoshinare.—p. 239.
Typhoid Fever in an Infant Complicated by Suppurative Arthritis. E. N. Russell.—p. 240.
Anaphylaxis Due to Antistreptococcal Serum. C. L. Graham.—p. 240.
Cesarean Section. C. L. Forde.—p. 241.

Comparison of Sachs-Georgi and Wassermann Tests.—In a series of 1,575 serums, the following results were obtained by Taniguchi and Yoshinare in comparing the Wassermann test with the Sachs-Georgi test. Of 1,418 cases the reaction was positive in both tests in 553; negative in both tests in 845 and doubtful in both tests in twenty cases. When cases of syphilis which have undergone specific treatment are grouped by themselves the proportion of positive results with the Sachs-Georgi test is greater than with the Wassermann reaction. Results in 316 serums from treated cases: Parallel results: 256 cases (81 per cent.). Reaction positive in both tests in 152 cases; reaction negative in both tests in ninety-seven cases; reaction doubtful in both tests in seven cases.

Practitioner, London

August, 1921, **107**, No. 2

*Successful Treatment of Leprosy by Chaulmoogra and Other Oils. L. Rogers.—p. 77.
Protean Applications of Antigen Therapy in Practice. H. L. Lyon-Smith.—p. 102.
A "Course" of Vaccines. A. McKendrick.—p. 118.
Misuse of Autogenous Vaccines. C. E. Jenkins.—p. 123.
Use of Constant Electric Current in Treatment. A. R. Friel.—p. 126.
Instinct and Conflict. E. W. Jones.—p. 138.
*History of Tuberculosis. E. Cureton.—p. 145.

Chaulmoogra Oil and Sodium Morrhuate in Tuberculosis.—The success that has attended the use of sodium morrhuate in several cases of that particularly chronic tuberculous affection, lupus, together with experimental evidence that chaulmoogra oil preparations at least are inimical in vitro to acid-fast bacilli, including all three types of tubercle, Rogers says, still leaves ground for hope that further work on similar lines may, in time, lead to improvement in the

treatment of at least the more chronic human forms, of which lupus and surgical tuberculosis appear to furnish the best field. On the other hand, Rogers is more doubtful regarding the advisability of the general use of these preparations in pulmonary tuberculosis except by experts under carefully controlled conditions, at least until further evidence is available regarding their value in more localized and superficial tuberculous affections, any reactions in which will be visible and easily watched.

First Tuberculosis Sanatorium.—Cureton calls attention to the fact that Herman Brehmer, who opened an institution at Gorbersdorf in the Waldenberg Mountain during 1859 for the treatment of tuberculosis was not the first to do this. George Bodington started, in the little village of Sutton Coldfield, an establishment for the reception and treatment of "consumptives" prior to 1830, but so hostile was the medical profession then to his methods of treatment that its author was considered a little better than a lunatic, and "however resolutely he maintained his position, however firmly he supported his ideas, disapproval so universal drove patients from his establishment, where, several years previous to the publication of his essay, he had acted according to his principles and effected many cures. He finished by giving up the curing of consumption and transformed his hospital into a lunatic asylum."

Tropical Medicine and Hygiene, London

Aug. 1, 1921, **24**, No. 15

*Unclassified Fevers in Jamaica. W. F. M. Loughnan.—p. 201.
*Acute Bacillary Dysentery. N. Crichlow.—p. 204.
*Treatment of Tinea Imbricata. O. G. F. Luhn.—p. 206.

Unclassified Fevers in Jamaica.—Three types of unclassified fevers are described by Loughnan: Type I: A fever closely resembling sand-fly fever, which is very common. Type II: A fever which may be regarded as an atypical dengue, which exhibits much variation in its signs and symptoms. Type III: A fever which corresponds to Rogers' seven-day fever. Some of these fevers have been previously described under local names, such as Antilles fever and five days fever.

Treatment of Acute Bacillary Dysentery.—The combined serum and saline treatment seems to be the most successful treatment in Crichlow's experience. The patient is kept in bed and uses a bedpan if possible. The diet consists of milk, rice water, barley water, albumen water and whey during the acute stage. Afterward, arrowroot, cornflour, sago, beef or chicken broth, milk custards and soft boiled rice are given when the blood and mucus are absent from the stools. On admission, 1 ounce of castor oil and 20 minims of tincture of opium or tincture of chloroform and morphin compound are given. On the following day the following mixtures are administered: bismuth salicylate, 5 grains; compound ipecac powder, 3 grains; calomel, ¼ grain. To be mixed and made into a powder. Dose: Two to four powders every four hours. These powders are followed by a saline aperient—½ ounce magnesium sulphate or 1 dram sodium sulphate—every morning, administered daily until the blood and mucus disappear from the stools. If these powders are administered for too long a period mercuric poisoning may develop. But generally the blood and mucus disappear from the stools within a week. If the case is taken at the beginning of the attack the dysenteric symptoms may be checked within two days. When the blood and mucus have stopped the following powder is then given: bismuth salicylate, 5 grains; phenyl salicylate, 5 grains. To be mixed and made into a powder. Dose: Two to four powders three or four times a day. These powders are given for at least a week. As constipation is very apt to result, the bowels are kept opened by a mild aperient. In conjunction with the above treatment, emetin is sometimes administered, ⅓ grain emetin hydrochlorid, hypodermically night and morning for two consecutive days. Rectal injections are found useful, and whenever possible are resorted to. The solutions used are weak potassium permanganate solution, Condy's fluid, weak boracic acid solution, or saline solution.

Treatment of Tinea Imbricata.—A mixture of salicylic acid, 4 ounces, glacial acetic acid, 4 ounces, and methylated spirit, 36 ounces, proved very efficient in Luhn's experience in the treatment of tinea imbricata.

Archives des Maladies de l'Appareil Digestif, Paris

August, 1921, **11**, No. 4

*Gastro-Enterostomy for Perforation. A. Basset and P. Uhlrich.—p. 225.
*Initial Symptoms of Cholelithiasis. M. E. Binet.—p. 242.
Varicose Lymphatics of Intestine. Bouchut, Mazel and Devuns.—p. 255.
Cancer of Pelvic Colon. F. Moutier and A. L. Girault.—p. 260.
*Gastric Ulcer Simulating Tabetic Crises. M. Klippel and M. P. Weil.—p. 280.

Emergency Gastro-Enterostomy for Perforated Ulcer.—Basset and Uhlrich comment on the conflicting views that prevail as to the advantage of gastro-enterostomy at once after the perforation has been sutured. They compare the experiences at different clinics, their conclusion being in favor of postponing the gastro-enterostomy until conditions are more favorable, unless there is impermeable stenosis of the pylorus-duodenum region. Even then, the general condition should be the guide whether to risk spreading the infection through the whole peritoneal cavity. The puckering up of one wall of the duodenum, after suture of a perforation, does not call for immediate gastro-enterostomy; much less anything of the kind in the stomach remote from the pylorus. The perforation should be sutured perpendicularly to the axis to avoid making the passage any smaller than necessary. Supervision should be kept up for several months, and gastro-enterostomy or resection should be advised if there is retention, etc.

Initial Symptoms of Cholelithiasis.—In 43.9 per cent. of Binet's cases of gallstones in women, the first signs of abnormal conditions in the biliary apparatus were noted during puberty. The cholesterin content of the blood is exceptionally high at puberty, and waves of gastric disturbances at this age warn of possible gallstone mischief later. In one woman of 23 complaining of fleeting, vague, digestive disturbances involving the pylorus region, the cholesterin content of the blood was 3.48. He accepted this as a sign of impending or installed cholelithiasis, and it was not long before calculi made their presence felt and fifty-one were found. A tendency to cholemia as well as cholesterinemia is common with cholelithiasis, also migraine. Binet has been impressed by the fact that in 96 of his 288 operative gallstone cases there had been some previous operation on the internal genital organs in 42; on the appendix in 81, and on the stomach in 3. The primary disturbances for which these operations had been done might have been the work of the otherwise latent and unsuspected cholelithiasis. This assumption was sustained by the persistence of the disturbances in many cases after the operation. Closer scrutiny of the gastric disturbances, noting their connection with menstruation, and with slight fever, might have obviated the unnecessary and futile operation. "The clinical age of a process is not the pathogenic age."

Gastric Ulcer Simulating the Crises of Tabes.—Klippel and Weil explain that hematemesis with tabes generally occurs during a gastric crisis and after vomiting, while the hematemesis with gastric ulcer or cancer may occur at any time, and the blood is bright red. Gastric ulcer may be accompanied by polyneuritis, the pains resembling those with tabes; they have had three cases of this kind, with necropsy in one. Tabetic hematemesis is so rare that they have found only half a dozen cases published in France.

Archives des Maladies du Cœur, etc., Paris

July, 1921, **14**, No. 7

*Paroxysmal Tachycardia. J. Yacoel.—p. 289.
*The Ventricle Group in the Electrocardiogram. E. Bordet.—p. 301.
*Reaction of the Small Arteries: Denivellation Test. G. Richard.—p. 316.
*Clinical Polygraph. R. Lutembacher.—p. 327.

Classification of Paroxysmal Tachycardia.—Yacoel explains that there are three types of paroxysmal tachycardia corresponding to the location of the essential focus in the Tawara or the Keith node or in the primitive bundle. He analyzes the different subgroups in each type, as he has studied them for many years with electrocardiography.

The Ventricle Group in the Electrocardiogram.—Bordet emphasizes the importance of analyzing the ventricle group as well as the variations in the auricle wave. It throws light on certain points obscure from all other angles.

The "Deleveling Test" of the Smaller Arteries.—Richard means by this the instructive behavior of the smaller arteries

according as they are on a level with the heart or are above or below its horizontal plane. This *denivellation* test was applied in various forms to 42 patients with high blood pressure; 22 cases of valvular disease; 16 of arteriosclerosis, and a large number of normal adults and children. The findings show the exact condition of the muscular walls of the small arteries. This is a factor the importance of which has not been duly appreciated hitherto.

Clinical Polygraph.—Lutembach's instrument records the tracings by optical means.

Bulletin de l'Académie de Médecine, Paris

July 26, 1921, **86**, No. 30

*Grafts of Ovaries. T. Tuffier.—p. 99.
*Experimental Research on Medicinal Shock. E. Jeanselme and M. Pomaret.—p. 106.
*Medicolegal Aspect of Epidemic Encephalitis. P. Chavigny and E. Gelma.—p. 113.
Latent Conjugal Neurosyphilis. Cestan, Riser and Stillmunkés.—p. 116.
*Home for Nursing Mothers. G. Schreiber.—p. 119.

Grafts of Ovaries.—Tuffier analyzes his 230 cases of graft or shifting of an ovary. The results were better in the younger the woman. One woman has had fairly regular menstruation for twelve years since the ovary was removed to another region from the infected area, at the age of 18. Menstruation cannot be restored if more than two thirds of the uterus has been removed. In his 203 cases of these autografts, both ovaries were thus shifted in 18 cases. Menstruation was never restored with an ovary grafted from another woman (20 cases), but in 76.71 per cent. of the 73 women whose ovary had been shifted, menstruation returned in from five to seven months; in a few instances not until after months or more. One woman thus regularly menstruating had the grafted ovary removed, and there was no further menstruation. The menses were not as regular as in normal conditions, and menstruation did not usually continue very long; in 14 of 51 operative cases only for six months; in 4 for two or three years, and in only 2 for longer than this.

Arsphenamin Shock.—The results of Jeanselme and Pomaret's research suggest that the acidity of the solutions of the drug or of the body fluids is what activates the precipitating power of the phenol element in the arsenicals. Flocculation ensues, and this entails the symptoms resembling those after inhalation of amyl nitrite.

Medicolegal Aspect of Epidemic Encephalitis.—Chavigny and Gelma are legal authorities, and they discuss the forensic import of the misdemeanors and possible crimes that may be committed by persons under the influence of epidemic encephalitis. They refer particularly to the vigilambulism and impulsive actions during the prodromal stage, before the presence of the disease is recognized. They cite two instances in which young men were arrested, one for seizing and riding away with a bicycle, the other for aimless wandering at night. Both seemed to be in normal health, but symptoms of epidemic encephalitis became evident the next day, with long gap in the memory on recovery. In a third case the mental confusion had been ascribed to nervous strain and fatigue the day after a fire, but the diagnosis was soon corrected by other symptoms of the disease.

Reduction of Infant Mortality.—Schreiber extols the excellent work of the *asiles d'allaitement* where homeless women nursing their babes are given shelter. The first one in France was founded at Nanterre in 1909, and 557 mothers nursing infants less than 3 months old have been given shelter. Only 3.2 per cent. of the infants died during the four or five months they were under this supervision.

Bulletin Médical, Paris

July 16, 1921, **35**, No. 29

*Digestive Disturbance of Endocrine and Sympathetic Origin. G. Lyon.—p. 581.
The Tuberculosis Dispensary at Carhaix. Marchais.—p. 584.

Digestive Disturbances of Endocrine-Sympathetic Origin.—In concluding this long study of the effect on the digestive apparatus of abnormal conditions in the endocrine or sympathetic system or both, Lyon remarks that, aside from organotherapy, treatment has to be mainly symptomatic.

Journal de Médecine de Bordeaux

July 25, 1921, **92**, No. 14

Prolapse of Valve Through Cecal Anus. Bégouin and Papin.—p. 401.
Morphology of Membranous Internal Ear. G. Portmann.—p. 402.
*Treatment of Dental Fistula. Despin.—p. 405.
*Incisions After Roentgen Ray Exposures. Arnould.—p. 407.
Serodiagnosis of Tuberculosis. C. Massias.—p. 410.
Sulphur in the Human Organism. J. Creignou.—p. 411.

Treatment of Fistulas of Dental Origin.—Despin warns to suspect a dental origin even with a fistula under the jaw toward the neck. A glandular process had been assumed in three cases of the kind, but curetting the fistula had had no effect. He then forced hydrogen dioxid of 100 volumes into the pulp cavity of the suspected tooth, and forced it through the tooth. It made its way out through the fistula; a saturated solution of phenic acid followed, and in a week the fistula had healed.

Incisions After Roentgen Ray Exposures.—Arnould reports a case which warns of the danger from incising the skin at a point previously sensitized by roentgen exposures. If the skin shows pigmentation from the exposure, this area should be avoided in incising. In the case described, the scar left by the incision in the sensitized area was the seat of severe pains, stabbing, lancinating, twisting pains or a dull deep ache or burning, varying from day to day, for six months. The intolerable pains and atony of the tissues were relieved by heliotherapy, supplemented by superheated air.

Journal d'Urologie, Paris

July, 1921, **12**, No. 1

*The Ureter Reflux. André and Grandineau.—p. 1.
A Calciiód Renal Hydatid Cyst. H. Minet.—p. 13.
*Emetin Treatment of Bilharziasis. M. Bonnet.—p. 15.
*Voelcker's Ischiorectal Prostatectomy. A. W. Fischer and O. Orth.—p. 63.

The Ureter Reflux.—The three cases reported by André and Grandineau differ from the thirty on record in which there was reflux into a tuberculous kidney, in that in their cases the reflux occurred into the sound mate. They summarize two other cases of the kind from the literature, and ascribe the anomaly to the intensity of the contractions of the bladder in renal tuberculosis, and a gaping ureter mouth. Necropsy in one of their cases revealed the damage from the reflux. The ureter had become dilated, and the kidney pelvis, and a tuberculous process had started in the lower end of the ureter. This ascending infection in time would have crept up to the sound kidney as in Wildbolz' experimentally induced ascending renal tuberculosis. Reflux into the second kidney may mislead in interpreting the findings with catheterization of the ureter. A gaping ureter and pain in the second kidney pelvis or ureter from distention, when fluid is injected into the bladder are instructive. If this pain occurs spontaneously, its coincidence with contraction of the bladder or micturition must be evident. In old cases it may be necessary to place a lumbar drain permanently in the pelvis of the kidney subject to the reflux. This was done in two of their cases, permitting nephrectomy a little later in one case; the other was inoperable.

Emetin Treatment of Bilharziasis.—Bonnet reports the cure of a case of bilharziasis under nine intravenous injections of emetin at intervals of two or three days, the doses increasing from 2 to 10 cg., and then six injections of 10 cg. each on alternate days. After suspension for six days, another series of 10 cg. was given at three day intervals. The drug was discontinued the fifty-third day. Aside from the characteristic asthenia under this treatment and tendency to vertigo toward the last, there were no appreciable by-effects. No living parasites or living ova could be found after the fifteenth injection.

Ischiorectal Prostatectomy.—Fischer and Orth's article was summarized in these columns, Feb. 12, 1921, p. 487, when it appeared in German. This condensed French translation reproduces the twenty-one illustrations.

Paris Médical, Paris

Aug. 6, 1921, **11**, No. 32

*Urology in 1920-1921. Papin.—p. 105.
*Calculus in Ureter. G. Marion.—p. 109.
*High Frequency Current in Urinary Surgery. Heitz-Boyer.—p. 112.
*Bladder Disturbance with Anteversion of Uterus. J. Oraison.—p. 117.
*Prostatectomy. F. Marsan.—p. 120.
Hydronephrosis. E. Pillet.—p. 123.

Urology in 1920-1921.—Papin comments on two important publications of recent date on benign tumors of the prostate and the remote results of prostatectomy. Papin and Verlica, in the first, presented evidence that hypertrophy of the prostate often belongs in the category of tumors of embryonal origin, urethral rather than prostatic. The problems of the small hard prostate and the stenosis after prostatectomy are still waiting for solution. Ambard's ureosecretory index is not accepted by all, although Legueu places implicit reliance in it. Papin says of cancer of the bladder that all eyes are turned now on the remote results of radium treatment, all other measures having so often proved disappointing. The action of radium emanation needles, introduced after suprapubic incision, seems promising to date.

Calculus in Ureter.—Marion emphasizes that a calculus in the ureter calls for removal even more systematically and promptly than a calculus in a kidney. With anuria from a calculus which it is impossible to dislodge, he advises nephrostomy, attacking the calculus later.

High Frequency Current in Urinary Surgery.—Heitz-Boyer for ten years has been seeking to improve the technic and extend the fields of this method of treatment. In certain cases it permits the destruction at a single sitting of large hypertrophied lobes of the prostate, or the liberation of a calculus in the terminal ureter, or the cure of tuberculous ulceration in the bladder after nephrectomy, or the electric curettage of cystitis, or the cure of any and every subacute and chronic lesion in the urethra, including polyps and inflammatory pseudopolyps. Some of his patients have been cured for nearly ten years to date.

Bladder Disturbance from Anteversion of the Uterus.—The puzzling feature of these cases is that the anteversion may not be causing any symptoms otherwise, and the bladder disturbances are ascribed to everything but the true cause. There is usually secondary dyspepsia. The bladder is scarcely sensitive to contact or distention, but very sensitive to bimanual palpation which induces pains like those at micturition, with imperious desires. The pains are aggravated during menstruation, but they subside completely as the woman lies in bed. The cystoscope shows a normal aspect, at most a little redness at the neck. In one case the search for the cause of the disturbances had entailed futile catheterization of the ureters. These patients are always of the nervous, impressionable type, and develop neurasthenia readily. In three cases the disturbances ceased during a pregnancy but returned later. After failure of all other measures, he found that the most effectual way to relieve the mechanical injury of the bladder was to apply astringents to the uterus, injecting a weak solution of alum, followed by introducing into the vagina a tampon impregnated with starch glycerite and tannin. The action is palliative only, but some patients were relieved for a year when this treatment had been kept up for a month. Pessaries never answered the purpose.

Prostatectomy at Two Sittings.—Among the advantages of this technic Marsan enumerates the reduction of the routes for absorption of infection as the skin down to the bladder and the prevesical space have healed over before the prostate is enucleated. He advises a very small incision, a good fingerbreadth above the pubis. In Rafin's 132 cases, the interval before the prostatectomy followed was from two to four weeks in 10; from one to three months in 43, and up to two years in the others. Time enough must be allowed for the urine to clear up and the azotemia and Ambard index to decline and the general health improve. In 168 prostatectomies at one sitting, the mortality was 16.07 while it was only 7.57 per cent. in the 132 two-sitting cases, and in the last 109, only 5 per cent. This is also Legueu's figure.

Presse Médicale, Paris

Aug. 3, 1921, **29**, No. 62

*Total Colectomy. Sir Arbuthnot Lane.—p. 613.
The Manometer Mask Test of Vital Capacity. M. F. Carrieu.—p. 616.

Total Colectomy.—Lane's conclusions from his twenty years of study of chronic intestinal stasis are to the effect that total colectomy is indicated when digestive disturbances and signs of autointoxication accompany the chronic intestinal stasis. Also when there are merely phenomena indicating autointoxication, such as neuralgias, general depression, emaciation, abdominal malaise, cold hands, menstrual disturbance, etc., accompanying the chronic intestinal stasis. Also in conditions resulting from the intestinal stasis, such as deforming rheumatism, tuberculous rheumatism, Addison's disease, chronic mammitis, exophthalmic goiter, Raynaud's disease, etc. In all these conditions, if radioscopy reveals intestinal stasis, he urges to operate. The patients will recuperate and improve considerably, especially if the pathologic condition is not of long standing. If there is infection, a sample of the intestinal flora should be secured during the operation and utilized to make an autogenous vaccine. The results of the operation should be supervised for several months. The physician should be on the alert to detect and correct the various insufficiencies for which the chronic stercoremia is responsible: insufficiency of muscles, nerves, glands, etc., and train in physical reeducation. The great majority of the colectomized have their life transformed, an actual resuscitation. The technic, etc., and the advantages of the total over partial colectomy are discussed.

Aug. 6, 1921, **29**, No. 63

Oscillometer Study of the Pulse. A. Mougeot.—p. 621.
*Ear Test for Inherited Syphilis. J. Ramadier.—p. 624.
Physiology of Appendix. L. Binet and G. J. Dubois.—p. 625.

Ear Test for Inherited Syphilis.—Ramadier gives an illustrated description of a pneumatic test of the vestibule, a positive response being nystagmus or a slow movement of the eyeballs, under compression or aspiration of the air in the external ear. This "sign of a fistula without fistula" is evidence of some lesion in the internal ear alone, and this is comparatively common with inherited syphilis. He never found this test positive in the normal nor in other forms of ear disease. No case has yet come to necropsy, but a specific osteitis of the bony capsule of the labyrinth would explain the clinical manifestations. This Hennebert test is applied with a speculum and rubber bulb.

Progrès Médical, Paris

July 23, 1921, **36**, No. 30

*How to Administer Pepsin. M. Loeper and J. Baumann.—p. 345.
Technic for Spinal Anesthesia. P. Delmas.—p. 347.
*Brain Tumors in Children. A. Broca.—p. 348.

Administration of Pepsin.—Loeper and Baumann give 0.1 gm. of pepsin exactly one hour before the meal. It then regulates stomach secretion, they say, and seems to exert a general harmonious, preventive and antitoxic action. When given during the meal, it has merely a transient substituting action.

Brain Tumors in Children.—Broca recently reexamined a girl whom he had treated by a decompressive operation nine years before. In this, and in two other cases he describes, the symptoms indicating pressure on the brain were pronounced. Choked disk is the effect of pressure, and it can retrogress without entailing atrophy of the optic nerve if the pressure is relieved in time. As long as the skull is elastic, the pressure from a brain tumor is seldom so great as in older children and adults. The pressure may spread the sutures; in this case temporary relief follows. In one such case the vomiting and headache lasted only a month although the diagnosis of a brain tumor was beyond question. In his case with an interval of nine years since the palliative operation, the girl, now 20, is still blind, and the mental condition has deteriorated, but she does not suffer and has a good appetite. The large decompressive operation followed seven months after the first symptoms of the brain tumor, but there were no focal signs. In such cases, when it is impossible to locate the tumor, all we can do is to watch for the first indications of choked disk, and operate at once to ward off blindness from the intracranial pressure.

Revue Franç. de Gynécologie et d'Obstét., Paris

May, 1921, **16**, No. 5

*Blood Pressure in Eclampsia. P. Balard.—p. 257.
Draining After Supravaginal Hysterectomy. C. Daniel.—p. 278.

The Blood Pressure in Eclampsia and the Albuminuria of Pregnancy.—Balard estimates the blood pressure with Pachon's oscillometer. He declares that the diastolic pressure throws light on the prognosis and shows the effect of venesection and other measures. Every intoxication toward

the close of a pregnancy is accompanied by high blood pressure. The figures reached sometimes were the highest he has ever known. The diastolic pressure rises with peripheral vasoconstriction, especially in the glomeruli. It occurs elsewhere, but here it blocks the kidneys more or less. The heart struggles against this with vigorous systoles, and treatment must aim to unblock the kidneys and sustain the heart. The guide here is the blood pressure. A rise in the diastolic pressure, proportionately higher than the systolic, is a bad omen. A high blood pressure therefore calls for treatment of albuminuria in the pregnant with as much energy as if there were already convulsions. This is the only means to ward off damage of the kidneys, possibly irreparable and fatal. Venesection relieves the heart, and the blood pressure drops at once. Balard has had cases in which delivery proceeded without hemorrhage, and the eclampsia persisted afterward as before. Venesection is the only salvation, and it should be ample enough for the diastolic pressure to decline decidedly at once, and there should be no guesswork as to the decline; it should be carefully measured. In one case he had to draw up to 1,200 gm. of blood to accomplish the purpose. No by-effects were noted. Morphin also reduces the blood pressure, but only slightly and temporarily. When the patient is kept too long on milk alone, the diastolic pressure declines as desired, but if the systolic pressure and the index decline likewise, warning that the heart is growing weak, more nourishing food is required. Purgatives and moderate doses of chloral to combat the nervous excitability should supplement the venesection.

Schweizerische medizinische Wochenschrift, Basel

July 21, 1921, **51**, No. 29

*Cataract with Myotonia Atrophica. Alfred Vogt.—p. 669.
*Ether Treatment of Peritonitis. B. Lienhardt.—p. 674.
Indications for Operative Treatment of Hernia. Nigst.—p. 679.

Cataract with Myotonia Atrophica.—Vogt has seen four cases of myotonic dystrophia and he knows of only four cases seen by others in Switzerland. A strange feature of this disease is the frequent involvement of other organs besides the muscles, the resulting symptoms a remarkable mixture. Cataract is common. It was evident in five of the eight Swiss cases, and in all the disease showed a marked familial and hereditary character. In one of Vogt's cases the father, one son and one daughter presented both the myotonic dystrophia and the cataract, while one other son had the former; the four other children escaped both. In Vogt's other case the woman was bald on the front of the head, with disturbance in speech, and she is crippled from the extreme atrophy of the hands and arms. A number of cases are known in this family also. The cataract in all these myotonia cases gave evidence of a peculiar abundance of cholesterin during the early stages, which confers a characteristic structure on it.

Ether Treatment of Peritonitis.—Lienhardt had one instance of collapse among the 101 cases of peritonitis in which he rinsed out the peritoneum with ether, but a few others have reported similar experiences. Not more than 100 gm. should ever be used. It seems to tend to reduce the temperature and stimulate leukocytosis, in addition to the striking postoperative analgesia; but the principal advantage is the reactive inflammation and exudation which pours out antibodies on the infectious process. The local chilling from the ether stimulates the bowel and vessels to contract, and thus it promotes peristalsis and the circulation. The great drawback is the development of adhesions and bands later. These were not prevented by associating camphorated oil with the ether, and hence this ether treatment should be reserved for only the severest cases. The mortality in his 22 cases was 18.1 per cent.

Pediatria, Naples

July 15, 1921, **29**, No. 14

*Contagiousness of Tuberculosis in Infants. O. Cozzolino.—p. 633.
Smallpox. V. Tripputi.—p. 638.
*Craniotabes. S. de Stefano.—p. 643.
Peculiar Behavior of Measles. A. Bellei and B. Maggesi.—p. 653.

Contagiousness of Pulmonary Tuberculosis in Infants.—The 3 months infant and girl of 2½ years must have acquired the tuberculous infection in some casual manner outside the family circle. An older child in each of the families soon developed acute miliary tuberculosis or tuberculous meningitis. No tubercle bacilli could be found in the sputum of the infant and young child; they swallowed their sputum.

Craniotabes.—De Stefano tabulates the findings in fifty-two cases of craniotabes. They justify the assumption of inherited syphilis in every case of craniotabes. All but nine of the fifty-two were breast fed. Over 71 per cent. of all presented signs of syphilis. In the others thyroid insufficiency or rachitis was evident. Craniotabes is often the first manifestation of rachitis.

Policlinico, Rome

Aug. 8, 1921, **28**, No. 32

*Tuberculosis and Chvostek's Sign. R. Pollitzer.—p. 1067.
Leukemoid Crises in Malaria. I. Bersani.—p. 1069.
Medical Inspection of Merchant Marine. G. Oreste.—p. 1071.
Prostitution and Abolitionism. S. Sberna.—p. 1073.

Tuberculosis and Chvostek's Sign in Children.—Pollitzer cites figures to show that Chvostek's phenomenon is observed in about 78.2 per cent. of children with rachitis and in about 18.4 per cent. of other children. His research has demonstrated the surprising frequency of tuberculosis in this group of nonrachitic children with positive Chvostek sign. Radioscopy in each one he examined showed some process in lung or bronchial glands, although percussion and auscultation had been negative. He theorizes that the demineralization which is common in tuberculosis may be responsible for the overexcitability of the nerves entailing the Chvostek sign.

Riforma Medica, Naples

July 23, 1921, **37**, No. 30

Hematuria. C. Bruni.—p. 697.
*Adaptability of Bacteria to the Opsonins. M. Gulino.—p. 699.
*Access to Foot Through Achilles Tendon. O. Nuzzi.—p. 701.
Trauma as Contributing Factor. E. Aievoli.—p. 702.

Adaptability of Bacteria to the Opsonins.—Gulino's experiments were made with staphylococci and the bacterium of Malta fever. The facts observed explain the failure of Wright's vaccines at times, and suggest the advisability of changing to a heterogenous vaccine.

Access to the Heel Through Achilles Tendon.—Nuzzi illustrates the technic for the transachillean operation, and the means to restore approximately normal conditions afterward.

Rivista Critica di Clinica Medica, Florence

June 25, 1921, **22**, No. 18

The Corpus Striatum Syndrome Left by Epidemic Encephalitis. A. Furno.—p. 205. Conc'n No. 20, p. 229.

July 15, 1921, **22**, No. 20

*The Alcohol Test Meal. E. Sanfilippo.—p. 232.

The Alcohol Test Meal.—Sanfilippo has been applying parallel tests with the Ewald-Boas and the Ehrmann or da Silva purely chemical test with merely 300 c.c. of a 5 per cent. solution of alcohol to which 0.05 c.c. of sodium salicylate has been added. The stomach content is aspirated half an hour after the fluid has been ingested. He tabulates the findings in ten cases. They confirm the prevailing views on the action of alcohol on the secretory and motor function of the stomach, and demonstrate that this test does not answer the desired purpose.

Archivos Españoles de Pediatría, Madrid

May, 1921, **5**, No. 5

*Syncope and Apparent Death in Whooping Cough. A. Martinez Vargas.—p. 257.
To Ward Off the Chronic Stage. H. R. Pinilla.—p. 270.
Polyglandular Derangement. Dámaso Rodrigo.—p. 279.

Syncope and Apparent Death in Whooping Cough.—Martinez Vargas has found very few references in the literature to syncope and apparent death as a complication of pertussis, although convulsions and sudden actual death in whooping cough have been recorded by a number of writers. One child of 4 stopped breathing and the heart stopped beating, for one or two minutes or more, in its paroxysms of coughing. Investigation revealed that the family were giving the child an advertised remedy for whooping cough which reduced bronchial secretion and raised the blood pressure.

The paroxysms were thus rendered less frequent but each one more violent. Under an expectorant, the paroxysms soon became much less violent, and there were no further syncopes. In two other families the syncopes and paralysis of respiration in the infants were so severe that the parents had to keep the forceps ready for traction of the tongue, and give ether or chloroform and rub the heart region to revive the children. One infant of 6 months had to be given for sixteen consecutive days chloroform to actual anesthesia to ward off fatal arrest of the heart action. In all the cases he has observed, the syncope occurred at the onset of the paroxysm. The children felt the aura, and the syncope followed before bystanders heard the cough. The syncopes were less liable to occur when the air was moist. The communication between the larynx and the heart innervation, by means of the superior laryngeal nerve and the cardiac branches, once established, the syncope was brought on more readily and by weaker stimuli each time. He has found autogenous vaccines useful in whooping cough, giving great relief and warding off complications. For about a year his practice has been to give a daily intramuscular injection of 1 c.c. of ether to a total of six, and with highly satisfactory results.

Brazil-Medico, Rio de Janeiro

June 11, 1921, **1,** No. 24

*Braun's Flap Grafts. R. David de Sanson.—p. 299.
Freud's Theories and Psychanalysis. A. Lellis.—p. 300.
Cure of Abscess of Liver Under Emetin. F. Fignolini.—p. 303.

June 18, 1921, **1,** No. 25

The Medicinal Flora of Northeastern Brazil. F. de Lima Lisbôa.—p. 313.
Public Health Questions. L. Ribeiro, Jr.—p. 317.
Water in Transmission of Disease. A. Ricardo.—p. 318.

Braun's Skin Grafts.—De Sanson extols the ease, the simplicity and the successful outcome of Braun's method of burying in the granulating surface of a wound scraps of sound skin, planting them in rows like shoots or seedlings. The method was described recently in THE JOURNAL, June 4, 1921, p. 1621. He was impressed with the rapid healing even in apparently the most unfavorable cases, and adds that the technic is within the reach of almost any one.

July 16, 1921, **2,** No. 1

*The Cutaneous Manifestations of Plague. E. Araujo.—p. 1.
Chemical Cauterization of Tonsils. P. Mangabeira Albernaz.—p. 4.

The Cutaneous Manifestations of Plague.—Araujo noted only sixty cases with cutaneous manifestations among the 827 plague cases in the isolation hospital at Bahia. The cases were all grave in which the pustules or patches of inflammation developed, forty of the sixty dying.

Semana Médica, Buenos Aires

June 9, 1921, **28,** No. 23

*Syphilitic Disease of the Kidneys. C. P. Waldorp and O. Behr.—p. 661.
Physiologic Nystagmus. R. Argañaraz.—p. 666.
*Hydatid Cyst of the Gallbladder. A. Gutiérrez.—p. 671.
The Vitamins. C. F. Speroni.—p. 679.

Syphilitic Nephrosis.—Waldorp and Behr have noted that an intercurrent disease, especially malaria, is frequently the immediate cause of the development of the syphilitic nephrosis in acquired or inherited syphilis. It is also liable to develop in chronic malaria when syphilis is contracted. But syphilis alone is capable of generating it; the resulting "lipoidic nephrosis" develops usually during the secondary stage. They have witnessed its development during the course of specific treatment. The first symptoms are increasing weakness with loss of appetite and energy, pain in lumbar region, and anemia. Then comes a tendency to general dropsy with a very fluid opalescent effusion in chest and abdomen, free from sediment and cholesterin, with 7 or 8 per thousand chlorids; albumin and lipoids scanty. The course is long although the edema may subside in a few cases, but chronic interstitial nephritis is liable to be the outcome. In addition to the usual specific treatment of the underlying syphilis, thyroid treatment was required in some of their cases, especially in those with the syphilis inherited. Castex and other writers have been emphasizing recently the benefit from thyroid treatment in certain cases of kidney disease accompanied by edema. The edema with kidney disease resembles that in myxedema. The albuminuria is also favorably influenced by thyroid treatment in some cases.

Hydatid Cyst of the Gallbladder.—Gutiérrez adds a thirteenth case to the twelve already published in Argentina. In his case four cysts and a calculus were found in the gallbladder.

Siglo Médico, Madrid

May 28, 1921, **68,** No. 3520

*Electric Conductibility of Blood Serum. R. Novoa Santos and J. Arijón Gende.—p. 501.
*Extraction of Cataract in the Capsule. I. Barraquer.—p. 502. Conc'n No. 3521, p. 532.
Gastric Symptoms with Chronic Appendicitis. Rodriguez López.—p. 507.
*Habitual Scoliosis. J. Decref.—p. 508.
Partial Tetanus. E. Chauvin.—p. 510. Cont'n.

Electric Conductibility of Body Fluids.—In the experimental and clinical research described, no characteristic modification of the electric conductibility of the urine could be detected after removal of one or both kidneys or ligation of the pedicle, nor in clinical cases with and without uremia.

Vacuum Extraction of Cataract in the Capsule.—Barraquer gives an illustrated description of his method of "facoeresis" and presents arguments to demonstrate its superiority over other technics.

Habitual Scoliosis.—In concluding this review of the modern treatment of habitual scoliosis, Decref mentions a case in which the thyroid was injured in the course of a tracheotomy, and the child developed severe scoliosis afterward. It was arrested and cured by repose, reclining on the back, and thyroid treatment. Tincture of iodin internally seems to regulate the functioning of the whole system of ductless glands, and he says that he has never found anything else so useful for this. The only objection is the danger of stomach derangement from it, and this can be avoided by using vaporized iodin introduced under the skin. The iodin appears rapidly in the urine; the general health improves and the benefit is soon evident in the pretuberculous or tuberculous lesions. Bondreau's experience corroborates that of San Martin and others in respect to the value of large doses of iodin internally. It acts predominantly on the thyroid which Decref always found functioning defectively in these cases of scoliosis. Heliotherapy is a very useful adjuvant. He recalls that it acts on the blood in the superficial capillaries, and hence the more blood that can be attracted to the surface and the greater the area exposed and the longer the exposure, the more effectual its action. He urges more general application of heliotherapy as a heroic remedy for all these conditions.

Deutsche medizinische Wochenschrift, Berlin

July 7, 1921, **47,** No. 27

*Sterility in Women. G. Winter.—p. 765. Cont'n.
Experimental Investigations on the Disinfection of Infected Wounds. F. Neufeld and A. Reinhardt.—p. 768.
*Value of the Clinical Blood Picture. V. Schilling.—p. 771.
*Roentgen Ray in Polycythemia. A. Bottner.—p. 773.
Treatment of Polycythemia with Phenylhydrazin. Taschenberg.—p. 774.
Practical Value of E. Hoffmann's Illumination Method. Silberstein.—p. 775.
Turpentine in Dermatology. W. Lüth.—p. 776.
Acute Ileus of the Small Intestine as First Symptom of Tuberculosis of Mesenteric Glands; Cure by Enteroplasty. O. Homuth.—p. 777.
Origin and Treatment of Enuresis. A. Lippmann.—p. 777.
Typical Mongolian Spot in Child of German Extraction. Jacobi.—p. 779.
Present Status of Knowledge of "Colds." A. Bickel.—p. 780.
Hemorrhages Preceding Expulsion of Placenta. L. Blumreich.—p. 781.

Causes and Treatment of Sterility in Women.—While admitting the difficulty of judging the causes of sterility in a given case, Winter thinks that he gives therewith an accurate idea of the relative frequency of the various causes of sterility in women: Out of 178 cases of his private and clinical material, he states the causes of primary and secondary sterility to have been as follows: infantilism, 18 cases; colpitis, 1; stenosis of the external os, 17; stenosis of the cervical canal and os internum, 22; catarrh of the cervix, 5; endometritis, 17; parametritis, 7; perimetritis, 5; anteflexion of congested uterus, 12; retroflexion of the uterus, 14; lateroversion of the uterus, 3; carcinoma of the uterus, 1; myoma, 10; adnexa affections, 34, and perineal tears and prolapse, 12.

Value of the Clinical Blood Picture.—Schilling holds that the clinical value of the morphologic blood picture, in spite of the vast amount of work done in this field, is far from being adequately appreciated. To be sure, recognized dis-

eases of the blood, as leukemia, pernicious anemia, chlorosis and polycythemia have received proper attention and have caused morphologic details of the blood to be studied to a certain extent, but the general practitioner is prone to leave blood tests to the experts. Schilling emphasizes, however, that the practical value of blood examinations has a much wider range than this. He declares that the blood test is one of the few tests that may be routinely applied with great advantage in every case that presents any particular difficulties. He places it on a par with the taking of temperature, urinalysis, counting the pulse, auscultation and percussion. It has a fundamental value in determining the status praesens. It aids not only in the judgment of symptoms and thus in establishing a diagnosis, but throws also a vivid light on the prognosis. Basing his statements on his ten years' practical experience, he proceeds to defend his position that the differential blood count has great value not only in certain characteristic blood diseases but for universal application.

Roentgenotherapy in Polycythemia.—In a former communication, Böttner reported the case of a patient with pronounced polycythemia with tumor of the spleen and typical changes of the skin and mucous membranes (hemoglobin, 145 per cent.; erythrocytes, 9,800,000), who was completely cured by two series of roentgen-ray treatments. An interval of a year and a half has elapsed since the last irradiation, and there has been no relapse. However, in two more recent cases of polycythemia in which he employed similar methods, the results have not been so good. Only partial relief of the patients has so far been effected. He concludes, therefore, that while roentgenotherapy effects a cure in some cases, in others again all that can be accomplished is temporary, though effective, symptomatic relief.

Medizinische Klinik, Berlin

July 3, 1921, **17,** No. 27

Present Status of Treatment of Syphilis. A. Buschke.—p. 801.
Rejuvenation and the Puberty Gland. A. Kohn.—p. 804.
*Tuberculosis of Bronchial and Cervical Glands. H. Gerhartz.—p. 806.
Symptomatology of Myelomas. J. Citron.—p. 808.
Eczema as Vagotonic Manifestation. E. Pulay.—p. 808.
*Puncture of Longitudinal Sinus. E. Krasemann.—p. 809.
*Hirschsprung's Disease. E. Moser.—p. 810.
*Cheyne-Stokes Psychosis. S. Wassermann.—p. 814.
*Biologic Tests for Tuberculosis. R. Korbsch.—p. 816.
The Practitioner's Examination of the Middle Ear. K. Grahe.—p. 817.
The Subjective Element in Medical Certificates. W. Heyl.—p. 818.

Relations Between Tuberculosis of the Bronchial and the Cervical Glands.—Gerhartz reports four cases in which a tuberculous process in the bronchial glands seemed to have entailed secondarily a similar process in the cervical lymphatics above. In two of the four young men the lungs seemed to be intact.

Puncture of Longitudinal Sinus.—Krasemann did not hesitate to withdraw up to 40 or 80 c.c. of blood to relieve high pressure in the lesser circulation in some cases. As a rule, however, 8 to 10 c.c. was the limit. The procedure has been applied 300 times to date at the Rostock children's clinic, including his own 250 cases. The original suggestion to obtain blood in infants by puncture of the longitudinal sinus he attributes to Marfan, 1914, but numerous writers have reported its use since, and none mention any injury therefrom. His own experience with it has been favorable, but he adds that it had better not be attempted outside of the clinic at present.

Hirschsprung's Disease.—Moser reports two cases, in a woman and an infant, which teach the necessity for combating spasm as the indispensable first measure in treatment of Hirschsprung's disease. They teach also that some congenital anomaly, a constricting band or the like, is frequently a factor in the disturbances. In the first case a membranous band could be palpated; in the infant a muscular spasm simulated a band, but a spastic element was evident in the woman also. In short, he reiterates, the tendency to spasm, with or without an organic basis, is the essential element in Hirschsprung's disease, and the one to be combated first and foremost.

Cheyne-Stokes Psychosis.—Wassermann has observed the development of psychic disturbances along with the onset of Cheyne-Stokes respiration in the course of chronic heart disease, especially aortic valve defect. The psychosis which develops as compensation fails is accompanied by conditions resembling cardiac asthma, with intense motor agitation. The psychosis is of the usual symptomatic type, without special features.

Intradermal Test with Own Spinal Fluid.—Korbsch relates that a specific reaction was attained in two cases of tuberculous meningitis when he injected intradermally some of the patient's own cerebrospinal fluid obtained by lumbar puncture. Control tests on the healthy were constantly negative. The reaction is even more pronounced when the fluid is kept, slanting, in the incubator for one to three days. The test can be made also on immunized guinea-pigs, and the urine and serum used likewise for the test reaction.

Monatsschrift für Kinderheilkunde, Berlin

April, 1921, **21,** No. 1

Diet of German Children During the World War. Czerny.—p. 2.
Acromegaly in Childhood. G. Petényi and L. Jankovich.—p. 14.
*Influence of Diet on Premature Children. K. Neubauer.—p. 21.
Urea Content of Blood in Alimentary Intoxication. Wilmanns.—p. 31.
Sexual Glands in Predisposition to Tuberculosis. H. Mautner.—p. 38.
A Case of Meningococcus Sepsis. L. Mendel.—p. 43.

Influence of Diet on the Growth and the Development of Premature Children.—Neubauer recalls that infants prematurely born present marked differences from the healthy infant born at term. He examined 100 premature children with an average weight of 1,500 gm. He noted their physical development and height in earlier years and compared it with their development in later years. The theory that premature infants need more salt was confirmed. Physical development—height and weight—may be materially improved by the addition of mineral salts of milk. This may be accomplished by adding a buttermilk preparation to human milk. The advantage lies not only in better growth during the first year but also in later years.

Münchener medizinische Wochenschrift, Munich

July 8, 1921, **68,** No. 27

*Cerebrospinal Fluid in Rabbits. F. Plaut and P. Mulzer.—p. 833.
*Modern Protein Therapy. F. Rolly.—p. 835.
*Varying Composition of Spinal Fluid. W. Weigeldt.—p. 838.
Circulation in Spinal Arachnoid Sac. E. Becher.—p. 839.
*High Blood Pressure in Pregnancy. H. Hinselmann.—p. 840.
Early Diagnosis in Campaign Against Tuberculosis. Saathoff.—p. 842.
Total Volume of Erythrocytes in Tuberculosis. H. Kämmerer and L. Geisenhofer.—p. 844.
*Decortication of Lung in Pleural Empyema. A. W. Fischer.—p. 846.
*Coagulation After Irradiation of Spleen. F. v. d. Hütten.—p. 846.
Roentgen Irradiation of Infected Sweat-Glands in the Axilla. F. Peyser.—p. 848.
Treatment of Ozena. B. Griessmann.—p. 849.
*Indexes of Nutrition, etc. F. Rohrer.—p. 850.
Intravenous Injections Without Assistant. Fantl.—p. 851.
Concentration of Roentgen Rays. H. Chaoul.—p. 851.
Zosteriform Skin Necrosis After Intramuscular Injections of Mercury Succinimid. J. Jadassohn.—p. 852.
Poisoning from Thorn-Apple Leaves. A. Solmsen.—p. 852.
Tuberculin for Diagnostic Purposes (Moro). Kretschmer.—p. 852.
Intradermal Reaction. F. Mendel.—p. 852.
Discharges from Genital Tract; Treatment. M. Nassauer.—p. 853.

Cerebrospinal Fluid in Rabbits.—Plaut and Mulzer tabulate the findings in thirty-eight normal and in twenty-two syphilitic rabbits.

Protein Therapy.—Rolly's review of what has been accomplished in this line to date concludes with the warning that protein therapy is still in the tentative stage but is very promising.

Cerebrospinal Fluid at Different Levels.—Weigeldt reports experiences which show that the cerebrospinal fluid presents regular differences in its composition at different levels of the subarachnoidal space. The cell content of the very first portion of the fluid withdrawn should be estimated separately from the last portion. He has made a study of this in 382 pathologic and 124 normal cases, with far above 1,500 lumbar punctures. A few cases are described which show the difference in the diagnosis and prognosis according as the fluid is examined as it first spurts or at the last few drops, or the average of the whole.

Capillary Insufficiency with Pregnancy Nephritis.—Hinselmann relates that he has frequently noted blocking of the capillaries in the nail-fold in pregnant women with high

blood pressure and kidney disturbances. It may be intermittent, and may sometimes be relieved by venesection. This blocking of the capillaries was most pronounced in three severe cases of eclampsia. By supervision of the capillary circulation in the pregnant with high blood pressure, we can be warned of impending disturbances.

Decortication of Lung for Chronic Pleural Empyema.—Fischer reports a case of complete cure of a pleural empyema following a wound of the lung in 1918. Various plastic operations were undertaken without permanent benefit, but a complete cure was realized with Delorme's method of decortication of the lung, applied in 1920.

Coagulation After Roentgen Exposures of the Spleen and Liver.—Hütten was not able to detect any material influence on the hemorrhage at operations in thirty-five patients with pathologically retarded coagulation time, given prophylactic treatment with roentgen-ray exposure of the spleen, with exposure likewise of the liver in fifteen cases. The operations followed twelve or twenty-four hours later. His record shows that after a brief preliminary lengthening of the coagulation time, the coagulation time was materially shortened. This was most pronounced at the fourth and fifth hours, and it had disappeared by the eighth hour.

Indexes of Nutrition.—Rohrer suggests a number of indexes based on the height, the width, and the sagittal chest measure from front to back. By dividing the weight with the product of these three linear measures and multiplying by 100 we obtain a good objective index to serve as a basis for further discrimination.

Wiener klinische Wochenschrift, Vienna

July 7, 1921, **34**, No. 27

American Food Distribution Among Schoolchildren of Austria. C. Pirquet.—p. 323.
The Austrian Food Administration for the Provinces. E. Mayerhofer.—p. 324.
American Food Relief Commission in Austria. E. Nobel.—p. 325.
Determination of Dry Substance in Relation to Diet-Kitchen Management. R. Wagner.—p. 330.

Zeitschrift für Tuberkulose, Leipzig

June, 1921, **34**, No. 5

*Primary Tuberculous Foci in Children. G. Simon.—p. 345.
*Protection Against Tuberculosis in the Home. F. Ickert.—p. 355.
Prophylaxis of Tuberculosis. W. Kruse.—p. 381.
*Tubercle Bacillus Septicemia. Karl Nather.—p. 390.
*Arthropathies with Pulmonary Tuberculosis. M. Weinberger.—p. 391.
Periosteum Lesions in Tuberculous Dogs. D. Wirth.—p. 393.

The Primary Tuberculous Focus in Children.—Simon includes the connected glands in his conception of the primary focus, the primary complex, as Ranke calls it. His analysis of thirty-six cases showed that the right lung was involved three times more frequently than the left. The course of the cases was traced with roentgenography during the following years. The primary complex displays a striking tendency to heal, but when it displays a tendency to progress, the course may be acute or chronic. Metastatic foci do not have the characteristic satellite glands. The roentgen picture of the primary complex may be very much alike in adults and in children.

Protection of Children Against Tuberculosis in the Home.—Ickert reports the experiences in this line in 939 cases at Stettin. In 536 the contagious member of the family was isolated in the house; in seventy cases away from home; in 103 the children were removed from the home.

Tubercle Bacilli Septicemia.—Nather found miliary tubercles in a goiter in four cases and in a fifth case the thyroid was riddled with cheesy foci. The rarity of this finding suggests that the thyroid does not offer a favorable soil for tuberculosis. If the bacilli lodge there the process heals.

Osteo-Arthropathy with Cancer of Lung.—Reviewed when published elsewhere. See page 742.

Zeitschrift für urologische Chirurgie, Berlin

July 26, 1921, **7**, No. 4

*Prostatectomy at Two Sittings. H. Rubritius.—p. 109.
Case of Cyst in Parenchyma of Kidney. A. Zinner.—p. 123.
*Tests of Functional Capacity of Kidneys. O. Schwarz.—p. 128.
*Cause and Treatment of Nocturnal Enuresis. S. Gottfried.—p. 160.
Fibrosclerotic Paranephritis. A. Brenner.—p. 166.

Prostatectomy at Two Sittings.—Rubritius expatiates on the advantages of diverting the urine by cystostomy as a preliminary to prostatectomy. This allows measures to cure existing infection, and enables the kidneys to recuperate, while the patient, being relieved of his distress at micturition and the inconveniences of retention, has his sleep restored and his general health rapidly improves, thus materially improving conditions for the prostatectomy proper. By thus operating at two sittings, the scope of operative treatment of hypertrophied prostate becomes much broader, embracing many cases hitherto deemed inoperable. He adds that certain patients will find the relief sufficient and may decline further intervention, and there is the further disadvantage that these cystostomized will require considerable after-treatment, but these drawbacks do not outweigh the benefits from the two-sitting method in the graver cases. He gives the details of eleven experiences of the kind.

Functional Tests of the Kidneys.—Schwarz' article was read at a joint meeting of the Vienna Surgical and Urologic societies. He seeks to draw the balance sheet as to what has actually been accomplished by the numerous functional tests introduced in the last decades, and their practical value for internal medicine and surgery. After passing them in review, from the determination of the freezing point of the urine to the Ambard ureosecretory index, etc., he remarks: "But one fact throws a bright light on the whole situation, namely, that this whole recent development of functional tests of the kidneys has passed by German urologic surgery without making any impression on it. Of all the problems and the results of attempts at solution which I have been here systematically chronicling, German surgery has taken no heed. It is evident therefore that German surgery did not feel any necessity for them. A glance at the literature shows that, aside from determination of the freezing point, residual nitrogen, absolute and proportional excretion of the elements of the urine and the water freshet test, the majority of German surgeons have been fully satisfied with the phlorizin and the indigo carmin test findings." . . . "These however lack a physiologic perspective." He then proceeds to show, from his own experiences in 274 cases of surgical kidney disease, without a single death from renal insufficiency in the course of fourteen years, that an early diagnosis by catheterization of the ureters and the progress in surgical skill have been the solid bases for the successful surgery. From the standpoint of internal medicine, however, the finer methods of estimation of the various elements of kidney functioning are of extreme importance. The internist can apply a whole series of therapeutic measures beyond the point where the surgeon recognizes the limits of surgery. In conclusion he remarks that true post-operative renal insufficiency has been eliminated, and that this is possible with the simplest of means. To estimate the exceptional cases in which postoperative insufficiency of the kidneys is not directly connected with the secretory quality of the kidney, requires a clinical sense; no measurements will answer here.

Nocturnal Enuresis.—Gottfried reiterates that tenacious enuresis nocturna is the result of three factors: a substandard development of the nerve tracts controlling bladder functioning; exceptionally profound slumber; and some one of various inducing factors which differ in different cases and at different times. Treatment has to combat each of these three factors.

Zentralblatt für Chirurgie, Leipzig

July 9, 1921, **48**, No. 27

*Radium Applicator for Mouth. G. Perthes and O. Jüngling.—p. 958.
Drainage in Carcinoma of Bile Ducts. G. Hotz.—p. 959.
Resection or Gastro-Enterostomy in Gastric Ulcer Distant from Pylorus. M. Krabbel.—p. 960.
Sphincter for Artificial Anus. W. Goldschmidt.—p. 961.
Affection of Sheath of External Popliteal Nerve. C. Sultan.—p. 963.
Plastic Correction of Defects in Larynx and Trachea. Pfeiffer.—p. 965.
Plaster Splint for Fractured Clavicle. B. v. Mezö.—p. 968.

Plastic Radium Applicator for Buccal Cavity.—Perthes and Jüngling describe and recommend plastic applicators for radium irradiation of the mouth. The plaster cast is prepared in much the same manner as a dentist prepares a cast of the teeth, and the radium tube is fitted into this. They have made use of this technic especially in radium irradiation for cancer of the tongue. By this method, the radium could be retained in the correct position up to twelve hours. Roent-

gen irradiation from without was added. Although they admit that combined radium and roentgen therapy does not constitute a sure cure for cancer of the tongue, it occasionally effects a marked improvement. They have observed complete clinical cures for up to two years and a half.

Zentralblatt für Gynäkologie, Leipzig

July 2, 1921, **45**, No. 26

*Signs of Pregnancy. K. Holzapfel.—p. 917.
Measuring True Conjugate Diameter of Pelvis. Kirstein.—p. 919.
Malformations of Fetus in Relation to Hydramnion. Lau.—p. 923.
Ventrifixation of Uterus, an Obsolete Procedure. Albert.—p. 928.
Eclampsia and Endocrine System of the Child. Fraenkel.—p. 929.

Signs of Pregnancy.—Holzapfel recalls that softening of the tissues of the corpus uteri is the first distinct sign of pregnancy. Such relaxation is usually noted by palpation of the uterus between the hand and forefinger. He describes another way of demonstrating the change in consistency. Allowing the palpating forefinger and hand to glide along the corpus and beyond the fundus, with a slight exertion of pressure, the nongravid uterus snaps back as soon as the pressure is removed, but the gravid uterus resumes its shape more slowly. With a little practice this will become a reliable, though not infallible, sign for the early determination of pregnancy.

Zentralblatt für innere Medizin, Leipzig

July 9, 1921, **42**, No. 27

Rapid Methods for Determination of Urea in Urine, Blood and Other Body Fluids. H. Strohmann and S. Flintzer.—p. 545.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

June 18, 1921, **1**, No. 25

*Sensitiveness of the Cornea. E. Marx.—p. 3338.
*Neo-Arsphenamin in Malaria. A. Nieuwenhuyse.—p. 3349.
*Extension of Cancer into Vessels. W. van Raamsdonk.—p. 3355.
*Sarcoma of Mamma. A. Norden.—p. 3361.
*Convergence Spasm of the Eyes. S. J. R. de Monchy.—p. 3366.
Work of the Muscles and Lactic Acid. W. E. Ringer.—p. 3372.

Sensitiveness of the Cornea.—Marx shows that the cornea grows less sensitive from the center to the periphery.

Neo-Arsphenamin in Malaria.—Tertian malaria is prevalent in northern Holland, and Nieuwenhuyse frequently encounters persons who are unable to take quinin. These he treats with neo-arsphenamin, and the symptoms often subside after one injection and no further parasites can be found in the blood. No effect was observed in a case of quartan malaria, and even with tertian malaria, a relapse later sometimes exceptionally occurred.

Extension of Carcinoma Into Blood Vessels.—Van Raamsdonk found evidence that the cancer had grown into the blood vessels in 24 of 30 cases of mammary carcinoma; in 11 of 30 uterine cancers, and in 5 of 30 cancers of the tongue, mouth and skin. The proportion was thus 5:2:1, and this corresponds to the tendency to metastasis of these different groups. Involvement of the blood vessels thus detracts from the operability even in poorly vascularized regions.

Sarcoma of the Mamma.—The left breast was enlarged and the seat of erysipelas when Norden first saw the case, two weeks after the first symptom. This had been merely a little pain ascribed to pressure from a new corset. The woman of 45 was in florid health, and not a trace of malignant disease could be discovered, but the woman died the seventh month from the small-cell, round-cell sarcoma masked by the erysipelas at first.

Convergence Spasm of the Eyes.—The rhythmical convergence spasms of the eyeballs in the boy of 14 are not so frequent or regular as with nystagmus. There is also convergent strabismus, but there are no signs of meningitis. A tendency to choreic athetosic movements, slight incoordination of the fingers, and slight tendency to scanning speech suggest some disturbance in the corpora quadrigemina region.

Hospitalstidende, Copenhagen

July 13, 1921, **64**, No. 28

*Medical Bibliography of Greenland. A. Bertelsen.—p. 439. Cont'd.

The Medical Bibliography of Greenland.—Bertelsen gives a long list of publications on Greenland compiled in honor of the two hundredth anniversary of the colonization of Greenland by Denmark.

July 20, 1921, **64**, No. 29.

*Iso-Agglutinins in Human Blood. E. W. Johannsen.—p. 449.

Iso-Agglutinins in Human Blood.—Johannsen examined the blood of 150 subjects, his findings confirming the many problems connected with agglutination of the blood. Of the four generally accepted types of donors, 4 per cent. belonged to Group I; 36.7 to Group II; 12 per cent. to Group III, and 47.3 per cent. to Group IV.

Norsk Magazin for Lægevidenskaben, Christiania

August, 1921, **82**, No. 8

*Volitional Control of Artificial Hands. E. Platau.—p. 545.
*Thrombosis of Sinus Cavernosus. K. Høston.—p. 559.
*Atony of the Uterus. F. Jervell.—p. 568.
Relaxation of Right Diaphragm. L. Nicolaysen.—p. 575.

Cineplastic Prostheses.—Platou describes the principle and application of means for volitional control of an artificial hand, his illustrations showing the development of the principle and his own experience in three cases in which he applied the Sauerbruch technic. This has been applied in Germany, he says, in over 2,000 cases, and with a success which before the war would not have been deemed possible. It allows the countless small uses of the hand in daily life which do away with the sense of helpless mutilation. The earning capacity is correspondingly augmented, although heavy work cannot be resumed.

Thrombosis of the Sinus Cavernosus.—Høston concludes from the two cases of thrombosis of the cavernous sinus encountered at the Copenhagen Rikshospital that the prognosis is hopeless; it is beyond the relief of surgical intervention. Treatment can be only preventive, excising the primary focus as early and thoroughly as possible to ward off the thrombosis. In his two cases the primary focus was in the sphenoidal sinus, or throat. In the throat case a peritonsillar abscess had to be evacuated five days after the onset of the first symptoms, and pyemia followed the next day. Necropsy the seventeenth day after the first symptoms disclosed necrosis of both sphenoidal and occipital bones in addition to the thrombosis in the sinus cavernosus. An operation was attempted in both cases, but proved futile.

Atony of the Uterus.—In the two typical cases of atony of the uterus described, the blood from the genitals lost the power of coagulation although coagulation was not modified in the blood taken from other regions. The excessive hemorrhage occurred after manual separation of the placenta, and one of the women became fatally exsanguinated in a few hours, notwithstanding the most vigorous measures. The other recovered under transfusion of blood, this being followed by the immediate subsidence of the dangerous symptoms, while the uterus began to contract and the hemorrhage was arrested. The contractions stopped after a time and the bleeding began again; this time Momburg's method of compressing the abdominal aorta with a rubber tube was applied, and the hemorrhage was arrested anew and permanently. The compression of the aorta did not seem to do any harm, but the anemia from the losses of blood was intense for the first two weeks. After this, the woman rapidly recuperated and was dismissed in good condition the thirty-fifth day after delivery. The blood from the genitals regained its coagulating properties a few days afterward. This inability to coagulate provides a special danger which must be guarded against.

Ugeskrift for Læger, Copenhagen

July 14, 1921, **83**, No. 28

*Metabolic Findings in Obese Boy. E. Begtrup.—p. 923.

Obesity in Children.—Begtrup tabulates the metabolic findings on various diets in a boy of 11 who weighs 68 instead of the normal 33 kg. for his height. The father and mother are both corpulent, and nothing to indicate abnormal functioning of any endocrine gland can be discovered in the boy. The intake of food could be restricted to half the normal without the boy's suffering from this either subjectively or objectively. He seems well and lively. Now, at 16, he weighs 105 kg. He never has been an unusually hearty eater, and his working capacity seems to be as good as his mates'.

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